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# Wages Suggested Under Walsh-Healey Law

## As Result of the Hearing On March 27, Administrator Walling Suggests Wages of 35 To 50 Cents Per Hour Be Paid In Pulp and Paper Industry —Fourteen Days Is Given To File Briefs In Opposition To the Finding.

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D.C., June 14—Recommendations for wages in the paper and pulp industry under the Walsh-Healey government contract law ranging from 35 to 50 cents per hour have been made by L. Metcalfe Walling, administrator of the act as the result of a hearing held on the subject on March 27 before the Public Contracts Board. Fourteen days is given the industry in which to file briefs in opposition to the finding following which the recommendations will be forwarded to the Secretary of Labor for a permanent order.

### Recommendations

The following wage recommendations were made to the administrator by the Public Contracts Board:

On the basis of the foregoing Findings of Fact the Public Contracts Board respectfully recommends to the Secretary of Labor that the minimum wages in the manufacture or supply of paper and pulp, as previously defined, subject to the Public Contracts Act be determined to be as follows:

(1) 35 cents an hour or $14.00 per week of 40 hours, arrived at either upon a time or piecework basis in the States of Virginia, North and South Carolina, Georgia, Alabama, Tennessee, Kentucky, Mississippi, Louisiana, Arkansas, Oklahoma, Florida and Texas;

(2) 40 cents an hour or $16.00 per week of 40 hours, arrived at either upon a time or piecework basis, in the District of Columbia and all the remaining states not included under (1) above or (3) below.

(3) 50 cents an hour or $20.00 per week of 40 hours, arrived at either upon a time or piecework basis, in the States of Washington, Oregon and California.

In an official announcement on the question of wages in the paper and pulp industry the Labor Department says:

### Hearing

The Public Contracts Board held a public hearing in the matter of Prevailing Minimum Wages in the Paper and Pulp Industry on March 27, 1939. A notice of hearing (Exhibit A) was sent to a complete list of manufacturers of paper and pulp appearing in recognized commercial registers, to the labor organizations operating in the industry and to other interested parties (Exhibit B). Testimony at the hearing was given by representatives of two national trade associations, by representatives of organized labor and by officials of the Division of Public Contracts of the Department of Labor.

### Definition

The notice of hearing defined the paper and pulp industry as "that industry which is engaged in the manufacture of pulp and other fiber, and the primary conversion of pulp and fiber into paper and paper board, and in addition the manufacture and conversion of primary paper into toilet paper and paper towels, and also coated book paper".

The Board concludes from evidence given in the hearing that the manufacture of paper board should be eliminated from the foregoing definition (R 154-156; R 169 ff).

### Scope of the Evidence

A survey of wages paid in the paper and pulp industry in October, 1938, was submitted for the record by the American Paper and Pulp Association. This survey provided wage frequency tables by various classifications covering approximately 90,000 production workers in the industry or an estimated 80% of the total employed in the industry (R62) Geographical location, size of mill and occupational divisions were represented in the data submitted (Exhibit 1). Also submitted was a tabulation of base rates classified by states (Exhibit 6).

The Board has examined carefully the data submitted by the trade association together with the evidence in the transcript and the exhibits, and is of the opinion that they form an adequate basis for finding of the prevailing minimum wages.

### Prevailing Minimum Wages

The occupational group in which the lowest wages are paid consists of yard labor, numbering 10,821 of those covered in the survey. This group is composed largely of common labor. About 20% of all male labor in the industry is unskilled and receives a base rate or a rate not far above it, while between 55 and

*(Continued on page 18)*

# Acme Paper Box Co. To Build Paper Mill

## Associated Companies Headed By J. I. Oelbaum Complete Plans For Construction of a Paper Mill of 35 Tons Daily Capacity Adjoining Bag and Box Plants—Howard Smith Mills Purchases Don Valley Paper Co.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., June 12, 1939—The Acme Paper Box Company Limited of Toronto, Canada, and associate companies, of which J. I. Oelbaum is president, including Beaver Printing and Stationery Company Limited, Queen City Paper and Twine Company Limited, O & S Corrugated Products Company, Service Paper Box Company, and Acme Paper Specialties have completed plans for a paper mill to be located at 358 Carlaw avenue, adjoining their bag factory and box plant.

The structure will be "L" shaped and will be 2 stories high. The building will extend from Carlaw avenue to Thackeray street, a distance of 227 feet and 9 inches, and parallel Thackeray street a distance of 263 feet and 11 inches. Plans are also being prepared for a power plant and chimney. The power plant will be 40 x 44 feet and the chimney 125 feet high.

The plant will require 750 electrical hp. and 800 steam hp. The paper mill will be equipped with 6 beating and 5 Jordan engines. The machine will be a combination Fourdrinier Harper Cylinder consisting of 5 cylinders and 80 inch wire, fourty-two 48 inch driers, two 12 roll stacks of calenders, cutters and drum winder.

The machine will trim 76 inches and will produce about 35 tons of paper per day. The products will be specialty papers and specialty boards.

The plant when completed will cost about $250,000. The paper mill was designed by Orville H. Moore, a paper mill consultant who has built some of the most profitably operating mills in Canada. Associated with Mr. Moore is T. H. Stevens, a registered professional engineer of Ontario, also A. R. Whitelaw, a mechanical and electrical engineer.

### Howard Smith Buys Don Valley Mill

Howard Smith Paper Mills has announced the purchase, effective June 1, by a subsidiary, the Alliance Paper Mills, Merritton, Ont., of the Don Valley Paper Company, operating a one-machine mill in Toronto producing cover, bristol, index, tag, folder and blotting. This acquisition is expected to round out the company's operations. The subsidiary, Alliance Paper Mills, over 99 per cent of whose common stock is owned by the Howard Smith Company, was incorporated in 1928 to acquire the common stock of the Georgetown Coated Paper Mills, Ritchie & Ramsay, Ltd., of New Toronto, and Lincoln Pulp and Paper Company, also in Ontario. The Alliance Paper Mills manufacture sulphite pulp, writing papers, paper bags, wrappers, coated papers and like products.

### Great Lakes Paper Made 10 Year Contracts

"From a company source," Canadian Dow-Jones added. "It is learned that the position taken by Great Lakes Paper Company in its dispute with the Provincial Government over proration of output, is that three years ago the company entered into 10 year contracts with United States customers whereby it was guaranteed that some 25 publishers would contract for a minimum of 67,500 tons of newsprint per annum. This contract does not expire until Jan. 1, 1946. All the company is asking, this source claims, is to be allowed to fulfill the terms of this contract, which it would not be able to do if forced to curtail its production to the level prevailing under the proration agreement.

"This source points out that if the Provincial Government forces the company to curtail its production under the figure involved in this contract it would put itself in the position of compelling a company to break its contract. The contract was entered into three years ago with full knowledge of the Provincial Government and while the latter at first opposed the contract, opposition was later withdrawn. It is argued that this amounted to tacit consent.

"It was on the strength of this 10-year contract that bondholders of the former company were asked and consented to receive 60 per cent of their principal when the original first mortgage bond issue of $10,000,000 authorized and issued was reduced to only $6,000,000. In view of these facts, this company source claims, Great Lakes Paper Co. is contractually unable to curtail production as asked.

"It is understood the whole matter comes up for discussion with the Ontario Government, and possibly with representatives of the Quebec Government, in a few days. It is also learned reliably that, along with Great Lakes Paper Company, Minnesota and Ontario Paper Company is also being charged by the Government with exceeding its quota under the proration scheme.

### Proration Plan Not Followed By All Mills

Certain newsprint companies operating in Ontario and Quebec are not abiding by the proration scheme sponsored by the Newsprint Association and supported by the Provincial Governments of the two Provinces, Hon. Peter Heenan, Minister of Lands and Forests, told Canadian Dow Jones. In response to questioning, he said, the Government was going "to insist that these companies live up to the agreement and distribute labor as evenly and fairly as possible."

Mr. Heenan was asked whether Great Lakes Paper Company, Fort William, Ont., whose policies last year caused considerable furore in Government and investment circles and resulted in the resignation of C. H. Carlisle, former president, was again exceeding its quota of production, the Minister replied, "It is not a question of the company again failing to abide by the agreements. It never has," he said.

The Minister was asked whether any tangible action was planned against this particular company to enforce what the Government considers its proration obligations under the agreement. "I wouldn't say that," he replied. "All I can say is we are going to insist that labor be distributed."

# Bowater-Lloyd To Erect Sulphite Mill

## Official Announcement By the Commission of Government States That Bowater-Lloyd Are Completing Plans To Build Sulphite Mill In Newfoundland — To Survey Mills To Determine Value of Waste Material.

MONTREAL, Que., June 12, 1939—It has been officially announced by the Hon. J. C. Puddester, a member of Newfoundland's Commission of Government, that Bowater-Lloyd (Newfoundland) Limited, are proceeding with plans for the erection of a sulphite mill in Newfoundland, and are also to make extensions to wharfage and office accommodations. Woodcutting operations are scheduled to start immediately, and 7,000 men would be required, he said. Other work would provide employment for another 3,000. This year's cut was estimated, at 350,000 cords of pulpwood or 130,000 more than last year.

### Survey of Sawmill Waste

The Forest Products Laboratory of the Dominion Forest Service is making a survey of sawmill waste in a number of New Brunswick mills with the idea in view of collecting statistics as to the extent of waste and determining its prospective value as a by product. A party under officials of the Department has already entered upon the work.

It is proposed to include ten mills in the survey during the next two months and the investigation is to take into consideration the potential value of such by-products as edgings, shavings, slabs and sawdust. It is also proposed to visit some mills in Nova Scotia and it is expected that some extremely valuable data to the forest products industry will be thus made available.

### New Head for Dryden Paper Co.

At a meeting of directors of Dryden Paper Company, Limited, held in Montreal, F. A. Sabbaton was elected president, filling the post occupied by the late J. H. A. Acer. Mr. Sabbaton was formerly vice-president.

John S. Wilson, general manager, was elected vice-president to succeed Mr. Sabbaton.

### Price of Rayon Pulp Unchanged

The Financial Times of Montreal says it seems probable that the prevailing price of $75 a ton for rayon pulp (produced by Canadian International Paper, the Restigouche Company and B. C. Pulp and Paper) will be continued for the third quarter.

This price is $5 below the level of $80 a ton with which the year started, but conditions as yet do not hold out any grounds for expecting any advance over $75. The prevailing price throughout 1937 was $72.50 a ton; with the price advancing to $97.50 for the early part of 1938, then dipping to $85, with a further cut of $5 in effect at the beginning of 1939.

## Kalamazoo TAPPI Elects Officers

The Kalamazoo Valley Section of TAPPI met Thursday, June 1, at the Gull Lake Country Club. A golf tournament, sponsored jointly by Hercules Powder Company and Edgar Brothers Clay Company, was held in the afternoon. Attractive prizes were distributed as follows: Low Gross, Wm. Randall; Now Net, Wm. Kirkpatrick; Least Putts, H. B. Johnson; Most Putts, Carl Foss; Blind Bogey, A. L. Sherwood; Closest Tee Shot, Ray Olson; Most Strokes on One Hole, Paul deGuehery.

The evening dinner was followed by a business meeting. Mr. E. F. Whittington read the treasurer's report for the fiscal year, and it was moved, supported, and carried to accept the report as read.

The following members were elected by unanimous vote to hold office for the '39-'40 season:

Chairman—Wm. A. Kirkpatrick II, Allied Paper Company; Vice Chairman—W. K. Kidder, Bryant Paper Company; Secretary—Ray Olson, Bryant Paper Company; Treasurer—E. F. Whittington, Rex Paper Company. Executive Committee: 3 years—Paul deGuehery, Michigan Paper Co.; 2 years—Wm. Hathaway, KVP. Co.; 1 year—C. L. Batchelder, Hercules Powder Co.

The balance of the meeting was taken up by a talk, followed by a general discussion, on "Color and its Application" by Carl Foss of the Research Laboratory of the International Printing Ink Company, in New York City.

Those in attendance were as follows: J. M. Alden, Jack Jeuck, A. T. Sedgwick, H. F. Schnutzer, H. F. Smith, Donald Stadler, G. F. Touse, G. C. Schmid, A. E. Hays, M. S. Fogarty, Paul deGuehery, Wm. A. Kirkpatrick II, Carl E. Foss, O. W. Callinghan, E. G. Milham, C. E. Hellenberg, H. G. Potts, E. J. Kelly, W. A. Kelley, S. W. Campbell, J. F. Tooker, Ward Goodrich, V. O. Taylor, H. E. Barnes, R. H. Hurst, Philip Bixby, W. F. Hathaway, Frank Libby, Ed. Brown, Sam Shire, Bob Chandler, D. L. Monaco, J. C. Wood, Al. Perlick, L. H. LaLiberte, J. E. Bauman, Willis Taylor, Hoke Martin, J. W. Burke, F. L. Chappell, Jr.; F. K. Shankweiler, Clare Ver West, H. O. Ware, L. E. Fitzgerald, Robert Buss, Henry Reeves, Henry Nendorf, Joe Waber, Howard Bucklin, Hod Heath, A. M. Cole, H. C. Bradford, E. F. Whittington, W. S. Taylor, J. R. Verdon, E. B. Taylor, Guy Woodruff, J. A. Wise, W. B. Hadley, A. L. Sherwood, W. K. Kidder, Ray Olson, Wm. Randall, A. B. Milham, M. R. Wilkins, M. J. Roberts, R. F. Marshall, P. J. Thomas, F. D. Elliot.

## Mrs. H. S. Demarest Retires

Greene, Tweed & Co., 101 Park avenue, New York have issued the following notice:—"With regret we announce the retirement from office and from active participation in our business of our president, Mrs. H. S. Demarest, who kindly assumed the burden of office following the death in 1937 of her husband, who was president of our company for five years prior thereto. It is unnecessary to state that we shall continue serving our customers with the same fidelity as we have in the past."

# Passage of Bill for New Reservoir Likely

## Pending Legislation For Construction of Huge Reservoir On Upper Wolf River Likely To Be Favorably Acted Upon — Thilmany Safety Campaign Successful—R. A. Hayward To Address Meeting — Other News.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., June 12, 1939—Early passage is predicted in the Wisconsin Legislature of the bill which will enable the Wolf River Reservoir Company to construct a huge reservoir on the upper Wolf River at Lily, Wis., to give the needed supply of water to the Fox River, and the paper mills utilizing its water power. The bill is before the Senate for hearings, and enough support is indicated to assure its enactment.

Construction is to be started immediately after the bill is approved, Harry Brooks, an official of the company said. The bill has the support of the Association for the Relief of High Water, an organization which has demanded the lowering of the level of the Lake Winnebago storage for years, to the detriment of adequate power supply for the paper mills. Allen Tripp, secretary of the association, has placed before the legislators a statement containing twelve "good reasons" why the bill should pass. Among them he enumerates the furnishing of 28,000 additional theoretical horsepower, or an increase of 60 per cent of the Fox and Wolf Rivers. It will mean 526,000 man hours of increased employment, and an increase in earnings annually in the paper mill district estimated at three million dollars.

### R. A. Hayward to Speak at Safety Meeting

R. A. Hayward, president of the Kalamazoo Vegetable Parchment Company, Kalamazoo, Mich., has been selected as one of the speakers at the Kimberly-Clark Corporation's safety day, June 14, at Lakeview mill park, Neenah, Wis. Another speaker will be William C. Knoelk, chairman of the safety commission at Milwaukee, Wis., which won first place in a safety contest for large cities, sponsored by the National Safety Council. Mr. Hayward is well known in the pulp and paper industry for his advanced ideas on management, employee relations and safety promotion which have been incorporated in his own firm.

Safety acts will be put on by departments, and there will be talks by superintendents, staff heads and officers of the corporation. Various awards for safety will be presented. Music will be furnished by the band made up of employees of the Lakeview mill under the direction of Lester Mais. There will also be safety booths and displays.

### Nekoosa-Edwards Arrange Family Tours

Nekoosa-Edwards Paper Company, Nekoosa, Wis., has inaugurated a series of tours of company mills for families and friends of the employees, according to F. H. Rosebush, manager of the industrial relations department. The purpose is to acquaint the families with the job "where dad works."

### William F. Ashe Declines State Office

William F. Ashe, well known former personnel director of the Thilmany Pulp and Paper Company, Kaukauna, Wis., has declined appointment by Gov. Julius P. Heil as director of the state's departmental research bureau, created recently by the Wisconsin Legislature. Mr. Ashe was first made director of a state department of commerce, but resigned when it was abolished by the Legislature. When the research appointment was first offered, Mr. Ashe accepted, but later wrote Gov. Heil that after looking over the new department, he had decided not to accept. He gave no specific reasons, and has made no announcement of his future plans.

## To Try Hydroloid Case June 22

The petition of the L. L. Brown Paper Company, Adams, Mass., to uphold its exclusive license under the Hydroloid Patent for rag-content writing papers, used for documents, photographic papers, etc., will be tried June 22 in the U. S. District Court for the Southern District of New York.

It is stated that Mr. Brown acquired the license and working description in the year 1925 from the inventor Scherbak, who first created these nonaging, oil-, perspiration- and water-proof and very tough papers in 1915. Later Brown changed Scherbaks tradename "Hydroloid" into their own "Resistall", claimed in their catalogues the inventors rights for the process; that their papers only can be treated that way and that they are exclusively protected. Because of these publications and other claimed breach of license contract, the present owners of the U. S. patent canceled Browns license, whereupon Brown filed its petition in equity.

## George S. Witham Dead

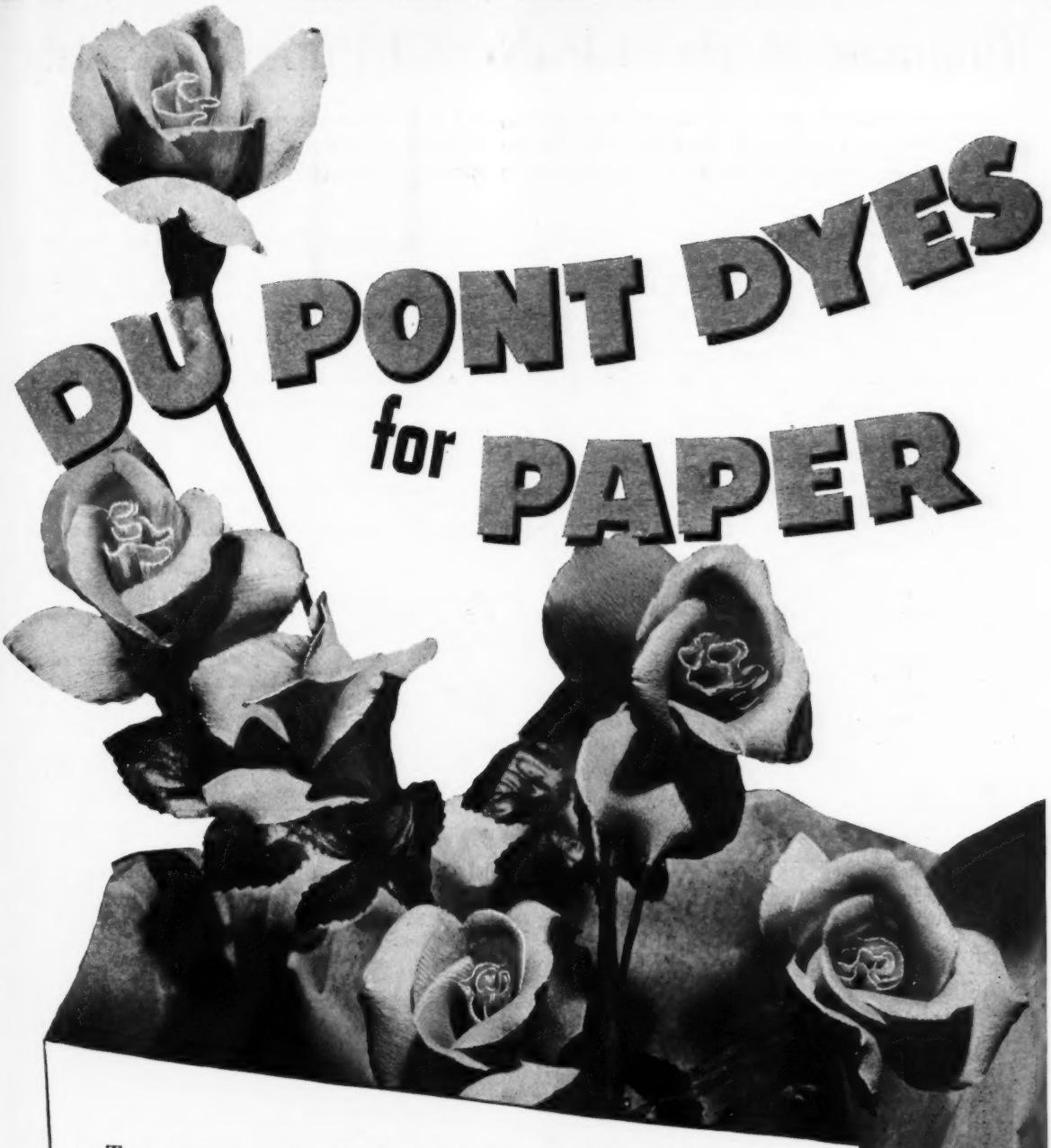
George S. Witham, an authority on the technique of paper manufacture, who retired eight years ago as manager of mills and a director of the Union Bag and Paper Company, died of heart disease at the age of 83 at his home in Hudson Falls, N. Y., on June 7.

A native of Gardiner, Me., Mr. Witham went to work at the age of 7 loading ice on Kennebec River steamers. When an injury to his back ended this employment he became a night watchman in a paper mill at 15.

Advanced to night superintendent, he used the larger salary to hire the three local high school teachers to give him the education he had missed. Later he wrote the text book, "Modern Pulp and Paper Making," which reached several editions, and the International Correspondence School course on "Paper Making."

Mr. Witham served seven terms as president of the village of Hudson Falls and for three years was president of the First National Bank of the same place. He took out more than 100 patents on paper manufacturing.

His third wife, Elizabeth Hurley Witham; a son, George S. Jr., and two daughters, survive.



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# Financial News of Pulp and Paper Industry

## Joint Committee To Receive Authority To Act In Future Abitibi Negotiations — Obtain Options On Timber Resources For the Proposed Iuka Mill—Bird and Son Give Additional Compensation—Assess Consolidated.

### New York Stock Exchange

High, Low and Last for the Week Ending June 14, 1939

| | High | Low | Last |
|---|---|---|---|
| Armstrong Cork Co. | 40¾ | 38 | 38 |
| Celotex Corp. | 13⅞ | 11¾ | 11¾ |
| Celotex Corp., pf. | 67 | 66 | 66 |
| Certain-Teed Products Corp. | 8⅛ | 7¼ | 7¼ |
| Certain-Teed Products Corp., pf. | 29¾ | 28 | 28 |
| Champion Paper & Fibre Co. | 21 | 20¼ | 20½ |
| Champion Paper & Fibre Co., pf. | 101¼ | 101 | 101 |
| Congoleum-Nairn Co. | 24 | 22½ | 22¾ |
| Container Corp. of America | 11½ | 11 | 11⅛ |
| Continental-Diamond Fibre Co. | 7½ | 7⅛ | 7⅛ |
| Crown-Zellerbach Co. | 10¾ | 10⅛ | 10⅛ |
| Crown-Zellerbach Co., pf. | 82½ | 80½ | 80½ |
| Flintkote Co. | 22⅛ | 20¾ | 21 |
| Robert Gair | 2½ | 2⅜ | 2⅜ |
| Robert Gair, pf. | 8½ | 8½ | 8½ |
| International Paper & Power | 8⅞ | 8¼ | 8⅜ |
| International Paper & Power, pf. | 34 | 31¾ | 32⅛ |
| Johns-Manville Corp. | 77½ | 72½ | 73½ |
| Johns-Manville Corp., pf. | 133 | 132 | 132 |
| MacAndrews & Forbes | 29½ | 29 | 29 |
| MacAndrews & Forbes, pf. | 131 | 131 | 131 |
| Masonite Corp. | 41½ | 40 | 40 |
| Mead Corp. | 8½ | 8 | 8 |
| Mead Corp., pf. | 58 | 58 | 58 |
| Paraffine Companies, Inc. | 47 | 45 | 45 |
| Ruberoid Co. | 23½ | 22 | 22½ |
| Scott Paper Co. | 50⅝ | 50½ | 50⅝ |
| Scott Paper Co., pf. | 117 | 117 | 117 |
| Sutherland Paper Co. | 29 | 28⅛ | 28⅛ |
| Union Bag & Paper Corp. | 8½ | 8⅛ | 8⅛ |
| United Paperboard Co. | 4⅞ | 4⅞ | 4⅞ |
| U. S. Gypsum Co. | 97 | 91 | 92¾ |
| U. S. Gypsum Co., pf. | 175½ | 175½ | 175½ |

### New York Curb Exchange

High, Low and Last for the Week Ending June 14, 1939

| | High | Low | Last |
|---|---|---|---|
| American Box Board Co. | 6¾ | 6¾ | 6¾ |
| Great Northern Paper | 36½ | 36¼ | 36¼ |
| St. Regis Paper Co. | 2⅛ | 2 | 2 |
| St. Regis Paper Co., pf. | 38½ | 38¼ | 38½ |
| Taggart Corp. | 3 | 3 | 3 |

## Abitibi Reorganization Plan Meeting

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., June 12, 1939—As anticipated, formal notices have been issued calling a joint meeting in Toronto on Tuesday, June 13, of four committees associated with the reorganization plans now under way for the Abitibi Power and Paper Company, Limited.

In the morning, separate meetings will be held with counsel. The meeting of preferred shareholders' committee will be under the chairmanship of D. H. Gibson; the common shareholders will be under the direction of R. G. Meech, K. C., while general trade creditors' committee will assemble under the chairmanship of Clement Tremblay. Later in the day these four committees will meet together for the purpose of appointing a joint committee, which will be given authority to act in future negotiations with the Bondholders' Protective Committee.

According to opinion received by the General Trade Creditors' Committee, there is a growing desire among large corporations doing business with Abitibi to assist in making possible a plan of reorganization. Likewise, the two shareholders' committees report they have received hundreds of letters from security holders in Canada, United States and England urging the committees to make every effort to work out a fair and equitable compromise plan of reorganization.

## Purchase Timber for Newsprint Plant

A press dispatch from Iuka, Miss., says that "a company of local business men was reported today to be obtaining options on timber resources for a proposed $5,000,000 newsprint mill in northeast Mississippi.

"W. L. Goodman of Iuka, leader in the movement, made the announcement and said the pine supply would remain perpetual by rotating from section to section.

"Timber resources of 75,000 to 100,000 acres of land in northeast Mississippi and parts of northwest Alabama and south Tennessee were to be purchased to provide a continuous supply for the plant in the event it was established.

"Tishomingo and Alcorn counties, in which most of the pine material would be available, have Tennessee Valley Authority power and are near Pickwick Dam on the Tennessee River.

"Mr. Goodman said the plant would be located at Iuka and be financed by the Reconstruction Finance Corporation. About 50,000 acres of slash pine have been signed up, he said, and twice that amount is available.

"The plant, according to Mr. Goodman, would not be opened for production for at least a year."

## Bird & Son Give Extra Compensation

EAST WALPOLE, Mass., June 12, 1939—Benjamin H. Roberts, president of Bird & Son, Inc., has announced that usual payment of additional service compensation to employees will be made again this year on June 30.

Employees who have been in continuous service for more than five years will receive 4 per cent of their normal six months' earnings. Employees whose service has been more than two years but less than five will receive 2 per cent.

## Consolidated Assessed For Land

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., June 12, 1939—Consolidated Water Power and Paper Company is to be assessed $1,663 for land taken by backwater of its dam at Stevens Point from Mr. and Mrs. Alex Cyra. The owners brought action in circuit court at Stevens Point to determine the value, after appraisers had set a value of slightly more than $600. The jury found the value of the Cyra farm was $6,250 before the taking and was $4,587 afterwards.

## Paul Torre Leaves A. E. Staley Mfg. Co.

Paul Torre who has been in the Paper Mill Division of the A. E. Staley Manufacturing Company, Decatur, Ill. for the past nine years has left the employ of this company and for the present may be reached at 2719 Pierce avenue, Niagara Falls, N. Y.

# Pacific TAPPI Meets at Tacoma

The Pacific Section of the Technical Association of the Pulp and Paper Industry and the Pacific Coast Division of the Superintendents Association met at the Winthrop Hotel, Tacoma, Wash. June 2-3, 1939. N. W. Coster of the Soundview Pulp Company, and Chairman of the TAPPI Section and Anton Siebers of the Longview Fibre Company, and Vice-Chairman of the Superintendents jointly presided. About 175 were present.

Niles M. Anderson of the St. Regis Kraft Company was general chairman and was assisted by A. H. Hooker, Jr., Earl G. Thompson, R. E. Chase, W. T. Webster, Fred Shaneman, W. R. Gibson and Mrs. N. M. Anderson as committee chairmen.

On Friday, June 2nd visits were made to the mill of the St. Regis Kraft Company and the plant of the Renton Refractories Company. There was also boat trips and a golf tournament. The latter was won by Frank Keuss of the St. Regis Kraft Company. In the evening there was an informal cabaret party.

### Technical Program

On Saturday, June 3, about 150 men had breakfast together and enjoyed an interesting lecture by R. E. Chase on market research.

An excellent technical program followed. W. C. McIndoe of Portland, Ore. talked on Wood Pulp—A Versatile Raw Material. In this paper the author pointed out the opportunities that exist for raw materials and chemical suppliers in the West. Bror Grondal of the College of Forestry, University of Washington, talked on "Cooking Problems and the Cell Walls of Wood". After showing a number of interesting slides depicting cell structure, Dr. Grondal showed the effects of mechanical impacts on the fibers and advocated the use of sharp chipper knives at all times.

Thomas E. Moffitt of the Hooker Electrochemical Company, Tacoma, was the next speaker. His subject was "Objectives in the Various Stages of Pulp Purification". Although V. B. Tipka of the Hawley Pulp and Paper Company was not present, a paper prepared by him on "The Factors Affecting the Life of Paper Machine Felts" was read.

C. E. Curran of the Forest Products Laboratory, Madison, Wis. was the final speaker. He discussed "Forest Products Research in Pulping Western Woods". In this paper Dr. Curran discussed the pulping qualities of Douglas fir and Western hemlock. These papers will be published in full in the trade papers. Following the luncheon there was a round table discussion of a number of problems presented by members.

### Shibley Award

Scott Z. Henderson of Tacoma, Wash. presided as toastmaster at the luncheon on Saturday. Following an introduction of committeemen and officers he presented the two national officers present. R. G. Macdonald, secretary-treasurer of TAPPI congratulated the Section for its fine work in organizing the dinner meetings and for establishings the Shibley Award which has done so much to develop interest in the meetings. He also commented on the two approaching national fall meetings, those of Syracuse, N. Y. on September 12-14, 1939 and the one to be held in Seattle in August, 1940. Since a large attendance of Eastern members is desired in 1940, Mr. Macdonald suggested that a large delegation of Pacific Section members should go to the Syracuse meeting and incidentally visit the World's Fair in New York.

W. H. Swanson, Vice-President of TAPPI was then introduced by N. W. Coster who made some remarks concerning the history and purposes of the Shibley Award. The candidates for the award were seated near the speakers table and were introduced. They were A. Orup and R. I. Thieme of the Soundview Pulp Company, Robert M. Kuhn of the St. Regis Kraft Company, Claude Christenson of the Crown Zellerbach Corporation, L. A. Wendt of the Weyerhaeuser Timber Company and John H. Bardsley of the Powell River Company. Mr. Swanson then called L. A. Wendt of the Pulp Division of the Weyerhaeuser Timber Company, Everett, Wash. to the platform to receive the award certificate and the fifty dollars cash award. Mr. Swanson further commended the Section for its progressiveness in establishing such a fine incentive as the Shibley Award.

A. H. Hooker then proceeded to present a large number of golf prizes.

The evening program consisted of a reception tendered to W. H. Swanson, C. E. Curran and R. G. Macdonald following which was the annual banquet and dance.

### Ladies' Program

An excellent ladies program was arranged by Mrs. Niles M. Anderson, Mrs. Fred C. Shaneman, Mrs. W. T. Webster and Mrs. Walter S. Hodges and consisted, in addition to the banquets and dances of a boat cruise around Tacoma in the "Thea Foss" and a luncheon at Paradise Sun on Mt. Rainier.

### Election of Officers

The following officers of the Pacific Section of TAPPI were elected for the following year: Chairmen pro tempore—N. W. Coster, Soundview Pulp Company; Vice-Chairman—Fred Olmsted, Crown Zellerbach Corporation, Camas, Wash.; Secretary-Treasurer—Fred C. Shaneman, Pennsylvania Salt Manufacturing Company, Tacoma Wash. and Executive Committeeman—H. V. Tartar, University of Washington, Seattle, Wash.

### Local Committees

The excellence of the meeting was largely due to the efforts of the following committeemen: General Chairman—Niles M. Anderson, St. Regis Kraft Company, Tacoma, Wash.; Registration—Earl G. Thompson—Great Western Electrochemical Company, Seattle, Wash.; Golf—A. H. Hooker, Jr., Hooker Electrochemical Company, Tacoma, Wash.; Breakfast—R. E. Chase, Tacoma, Wash.; Technical Program—W. T. Webster, St. Regis Kraft Company; Banquet and Entertainment—Fred C. Shaneman and Prizes—W. R. Gibson, Northwest Filter Company, Seattle, Wash.

### Large Attendance

There were present at the meeting one of the

largest local gatherings of the two organizations. Among them were:

Mr. and Mrs. C. E. Ackley, Hawley Pulp and Paper Company, Oregon City, Ore.; Gerald C. Alcorn, Weyerhaeuser Timber Company, Pulp Division, Everett; Mr. and Mrs. Chas. Anderson and Mr. and Mrs. Niles M. Anderson, St. Regis Kraft Company, Tacoma; Fred Armbruster, Powell River Co., Ltd., Powell River, B. C.; G. J. Armbruster, Soundview Pulp Company, Everett.

B. A. Bannan and Mr. and Mrs. Tom Bannan, Western Gear Works, Seattle; W. R. Barber, Crown Zellerbach Corporation, Camas; John Howarth Bardsley, Powell River Company Ltd., Powell River, B. C.; C. M. Barr, Cavin, Marshall & Barr, Seattle; W. R. Baumann, Pennsylvania Salt Manufacturing Company, Tacoma; T. H. Beane, Fibreboard Products Inc., Port Angeles; C. H. Belvin, Chromium Corp. of America, Portland; H. K. Benson, University of Washington, Seattle; W. L. Beuschlein, University of Washington, Seattle; Mr. and Mrs. A. L. Bibbins, Electric Steel Foundry, Portland-Seattle; Paul Billington, Weyerhaeuser Timber Company, Pulp Division, Longview; S. B. Biddle, Jr., Leeds & Northrup, San Francisco; M. W. Black, Inland Empire Paper Company, Millwood; R. C. Bledsoe, Powell River Company, Ltd., Powell River, B. C.; Mr. and Mrs. Carl E. Braun, Hawley Pulp and Paper Company, Oregon City; Mr. and Mrs. G. S. Brazeau, Weyerhaeuser Timber Company, Pulp Division, Everett.

Mr. and Mrs. Wm. E. Breitenbrach, Rayonier, Inc., Grays Harbor Division, Hoquiam; Martin Breuer, E. I. duPont de Nemours & Co., Inc., San Francisco; Mr. and Mrs. G. C. Brewster, Northwest Green Specialty Works, Shelton; John E. Brown, *Pacific Pulp and Paper Industry*, Portland; Ray Brown, St. Helens Pulp and Paper Company, St. Helens; D. L. Bumstead, Jr., C. C. Moore, Seattle.

Mr. and Mrs. A. M. Cadigan and Mr. and Mrs. R. D. Campbell, St. Regis Kraft Company, Tacoma; Mr. and Mrs. R. S. Carey, National Aniline and Chemical Company, Portland; Mr. and Mrs. John N. Carlson, Soundview Pulp Company, Everett; O. S. Cauvel, Washington Pulp and Paper Company, Port Angeles; Oscar Kenneth Chapman, Weyerhaeuser Timber Company, Everett; Dan Charles, Knox Woolen Company, Loring Coes Company, Seattle; Mr. and Mrs. R. E. Chase, R. E. Chase & Co., Tacoma; C. Christensen, Crown Zellerbach Corporation, Camas; Wm. M. Clines, General Chemical Company, San Francisco; Mr. and Mrs. Sidney M. Collier, Puget Sound Pulp and Timber Company, Bellingham; Mr. and Mrs. G. Cormier, St. Regis Kraft Company, Tacoma; Mr. and Mrs. N. W. Coster, Soundview Pulp Company, Everett; A. H. Cox, A. H. Cox & Co., Seattle; C. G. Crawford, Pelton Water Wheel Company, San Francisco; J. A. Cunningham, Simonds Saw and Steel Company, Tacoma; C. E. Curran, Forest Products Laboratory, Madison, Wisconsin.

C. W. Davis, Standard Oil Company, Seattle; E. A. Davis, Shell Oil Company, Seattle; Mr. and Mrs. J. J. Davis, Electric Steel Foundry, Portland; H. A. DesMarais, General Dyestuffs Company, San Francisco; E. F. Drake, National Paper Products, Port Townsend, R. E. Drane, St. Helens Pulp and Paper Company, St. Helens, Ore.; Mr. and Mrs. E. G. Drew, J. O. Ross Engineering Corporation, Portland.

K. Ivar Ekholm, National Aniline and Chemical Company, New York City; Carl Fahlstrom, Longview Fibre Company, Longview; Mr. and Mrs. F. J. Feeney, St. Regis Kraft Company, Tacoma; O. E. Fox, Weyerhaeuser Timber Company, Pulp Division, Everett.

Geo. Glading, Soundview Pulp Company, Everett; Lester T. and Mrs. Graham, Link Belt Company, Seattle; Bror L. Grondal, University of Washington-ton, Seattle; Geo. G. Guild, Huntington Rubber Mills, Seattle.

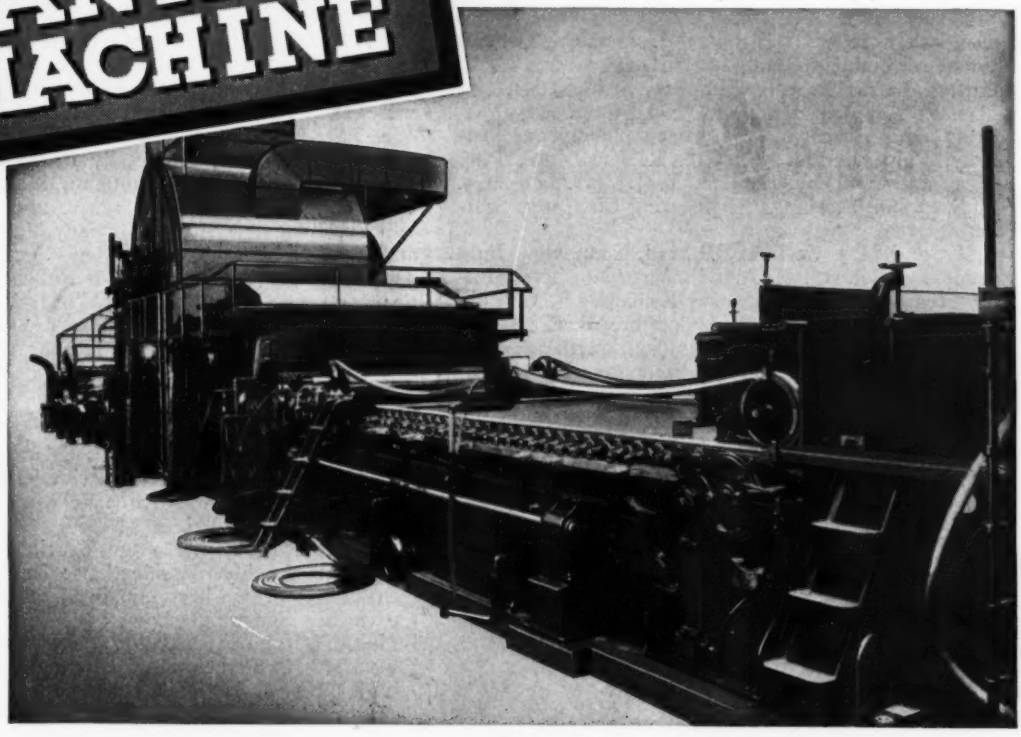
Mr. and Mrs. Kenneth B. Hall, Improved Paper Machine Corporation, Portland; D. V. Hamilton, Weyerhaeuser Timber Company, Pulp Division, Everett; R. N. Hammond, Weyerhaeuser Timber Company, Research Dept., Longview; Mr. and Mrs. Ray C. Hanson, National Tank and Pipe Company, Portland; S. H. Harrison, Westinghouse Electric and Manufacturing Company, Seattle; Mr. and Mrs. P. L. Harreschou, St. Regis Kraft Company, Tacoma; H. P. Hartley, Fibreboard Products, Inc., Summer.

R. S. Hatch and Mr. and Mrs. W. H. Haverman, Weyerhaeuser Timber Company, Pulp Division, Longview; A. D. Hawley, Pacific Coast Supply Company, Seattle; U. M. Heiple, Shell Oil Company, Tacoma; Mr. and Mrs. W. J. Higbie, Hercules Powder Company, Portland; Lee Hill, Weyerhaeuser Timber Company, Pulp Division, Everett; Mr. and Mrs. Walter S. Hodges, Appleton Wire Works, Portland; Adele Sue Hodges, Portland; Mr. and Mrs. John Hoffman, J. O. Ross Engineering Corporation, Portland; C. F. Holcomb, Edison Storage Battery Supply Company, Seattle; Mr. and Mrs. Albert H. Hooker, Jr., Hooker Electrochemical Co., Tacoma; O. L. Hudrlik, Portland.

L. T. Johnson, Hawley Pulp and Paper Company, Oregon City; H. M. Jones, Ohio Knife Company, Seattle; Mr. and Mrs. Edw. L. Keepers, Tacoma; Mr. and Mrs. Leo C. Kelley, B. C. Pulp and Paper Company, Ltd., Woodfibre, B. C.; W. A. Kelly, The Waterbury Felt Company, Portland; Mr. and Mrs. Ernie Kertz, John W. Bolton & Sons, Inc., Portland; Mr. and Mrs. Frank G. Keuss, St. Regis Kraft Company, Tacoma; J. O. Kjome, Scientific Supplies Company, Seattle; Dr. K. A. Kobe, University of Washington, Seattle; Robert Kuhn, St. Regis Kraft Company, Tacoma; Wm. Kun, Simond Saw and Steel Company, Seattle.

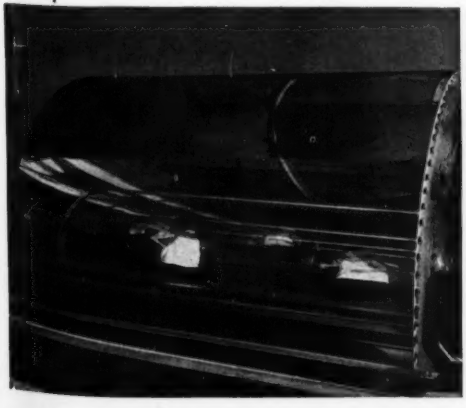
Mr. and Mrs. A. H. Lundberg, A. H. Lundberg Company, Seattle; R. G. Macdonald, Secretary TAPPI, New York City; R. V. Maier, General Electric Company, Portland; J. C. Mannion, Rayonier, Inc., Grays Harbor, Division, Hoquiam; Mr. and Mrs. W. C. Marshall, Heller Merz, Portland; Mr. and Mrs. R. W. Martig, Control Equipment Company, Portland; Chas. H. Martin, H. D. Fowler Company, Seattle; Mr. and Mrs. C. J. McAllister, Simonds Worden & White, Portland; Mr. and Mrs. J. H. McCarthy, Soundview Pulp Company, Everett; Mr. and Mrs. A. C. McCorry, St. Regis Kraft Company, Tacoma; Mr. and Mrs. L. S. McCurdy, National Paper Products Company, Port Townsend; Mr. and Mrs. Geo. H. McGregor, Weyerhaeuser Timber Company, Pulp Division, Longview; W. C. McIndoe, Industrial Chemist, Portland; Leonard McMaster, Asten Hill Manufacturing Company, Philadelphia; Joe E. McQuaid, Griffith Rubber Mills, Seattle; A. D. Merrill, Chemi-Pulp Process Inc.,

# THE Beloit YANKEE MACHINE



● **The Beloit Yankee Machine furnishes an economical easy means of diversification. No other machine has the all-around adaptability to fit the needs of mills making specialty papers, both light and heavy weights.**

**The machine is provided with all the latest features: Removable Fourdrinier ...High Speed Super Shake...Suction Rolls...High Pressure Dryer...Hypoid Drive, etc.**



**Beloit has developed a special alloy metal and special grinding and polishing process to produce the close grained, hard mirror finish shown in this photograph. This is a result of Beloit's many years of experience in building practically all the Yankee machines in this country.**

**Beloit has also recently developed a high pressure Yankee dryer to meet the demand for maximum production.**

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Watertown, N. Y.; F. R. Meyer, Standard Oil Company, Seattle; H. O. Meyers, Fibreboard Products Inc., Sumner; H. Norman Miller, Westinghouse Electric Company, Portland; Mr. and Mrs. K. M. Milligan, Northwest Lead Company, Seattle; Mr. and Mrs. T. E. Moffitt, Hooker Electrochemical Company, Tacoma; Mr. and Mrs. D. C. Morris, James Brinkley Company, Seattle.

F. A. Olmstead, Crown Zellerbach Corporation, Camas; Mr. and Mrs. A. Orup, Soundview Pulp Company, Everett; W. M. Osborn, Hooker Electrochemical Company, Tacoma; J. Osburn, General Chemical Company, Portland; Mr. and Mrs. C. D. Parker, Fafnir Bearing Company, Seattle; Mr. and Mrs. R. T. Petrie, Bagley & Sewall Company, Portland; Paul Pittenger, Weyerhaeuser Timber Company, Pulp Division; Everett; R. K. Prince, Pulp Bleaching Company, Orange, N. J.; Mr. and Mrs. A. S. Quinn, Stebbings Engineering Company, Seattle.

Mr. and Mrs. Carl A. Ramstad, Soundview Pulp Company, Everett; H. A. Rehnberg, Northwest Filter Company, Seattle; Donald Richards, B. C. Pulp and Paper Company, Ltd., Woodfibre, B. C.; H. H. Richmond, Electric Steel Foundry, Portland; Carl Ries, Weyerhaeuser Timber Company, Pulp Division, Everett; C. D. Ries, General Electric Supply, Seattle; James Ruck, St. Regis Kraft Company, Tacoma.

A. J. Sahlberg, Howard Cooper Corporation, Seattle; Mr. and Mrs. S. A. Salmonson, Soundview Pulp Company, Everett; Mr. and Mrs. W. A. Salmonson, Simonds, Worden & White, Seattle; M. E. Sanford, Fibreboard Products Inc., Sumner; Mr. and Mrs. Harlan Scott, *Pacific Pulp and Paper Industry*, Seattle; Geo. E. Schmidt, Pennsylvania Salt Manufacturing Company, Tacoma; J. E. Shackelton, Columbia Steel Company, Seattle; A. W. Shaw, Ingersoll Rand Company, Portland; J. Shedd, Everett Pulp and Paper Company, Everett; Mr. and Mrs. B. L. Shera, Pennsylvania Salt Manufacturing Company, Tacoma; Mr. T. M. Shields, Simonds Saw and Steel Company, Seattle; D. L. Shirley, Link Belt Company, Portland; Mr. and Mrs. Carl Sholdebrand, Hawley Pulp and Paper Company, Oregon City; Mr. and Mrs. Anton Siebers, Longview Fibre Company, Longview.

P. S. Simco, National Paper Products, Port Townsend; P. F. Skoog, Puget Sound Pulp and Timber Company, Bellingham; C. V. Smith, St. Helens Pulp and Paper Company, St. Helens; L. K. and Mrs. Smith, *Pacific Pulp and Paper Industry*, Seattle; Ray Smythe, Portland; Jerry P. Strasser, Stein Hall Manufacturing Company, Chicago; Franz Sturm, Oregon Pulp and Paper Company, Salem; Philip E. Sullivan, Ingersoll Rand Company, Seattle; J. Symmonds, Sinclair Wire Company, Seattle; W. H. Swanson, Kimberly Clark Corporation, Neenah, Wisconsin.

H. V. Tarter, University of Washington, Seattle; Mr. and Mrs. A. Ward Tedrow, Oswego; R. I. Thieme, Soundview Pulp Company, Everett; M. W. and Mrs. Thom, Sidney Roofing and Paper Company, Victoria, B. C.; Earl G. Thompson, Great Western Electric Chemical Co., Division of the Dow Chemical Co., Seattle.

C. O. Tripplet, Hawley Pulp and Paper Company, Oregon City; R. M. True, General Dyestuffs Company, Portland; Mr. and Mrs. Hugo Trygg, St. Regis Kraft Company, Tacoma; Mr. and Mrs. James Turek, Jr., Stein Hall Manufacturing Company, Portland; Mr. and Mrs. A. S. Viger, Rayonier, Inc., Shelton Division, Shelton; Russell Vognild, Hooker Electrochemical Company, Tacoma; Ed. A. Vohs, Weyerhaeuser Timber Company, Pulp Division, Everett.

Mr. and Mrs. T. J. Waltman, Ohio Knife Company, Portland; Mr. and Mrs. H. F. Warren, R. E. Chase & Co., Tacoma; L. H. Wear, Taylor Instrument Companies, Portland; E. A. Webber, Oregon Pulp and Paper Company, Salem; Mr. and Mrs. Wm. T. Webster, St. Regis Kraft Company, Tacoma; C. T. Welsh, Spear and Jackson Saws, Tacoma; L. A. Wendt, Weyerhaeuser Timber Company, Pulp Division, Everett; Mr. and Mrs. Forrest West, St. Regis Kraft Company, Tacoma; Mr. and Mrs. E. V. White, University of Idaho, Forestry Dept., Moscow; Mark Whitman, Marathon Paper Company, Rothschild, Wis.; Mr. and Mrs. J. A. Wilcox, Longview Fibre Company, Longview; Mr. and Mrs. J. M. Wilcox, St. Regis Kraft Company, Tacoma; Zina A. Wise, Griffiths Rubber Mills, Seattle; Mr. and Mrs. Edw. P. Wood, Weyerhaeuser Timber Company Pulp Division, Longview; L. R. Wood, Rayonier, Inc., Grays Harbor Division, Hoquiam; L. F. Wray, Simond Saw & Steel, Seattle.

## WAGES UNDER WALSH-HEALEY LAW

*(Continued from page 9)*

60% of the female workers receive base rates (Exhibit 1; R 76, 105, 160). Female workers represent about 10% of the total.

Exhibit 1 gives the wage distribution of yard labor and of other classifications; Exhibit 6 shows the number of workers employed at base rates in the various States but shows no occupational distribution. Slightly over 27,000 workers are reported at the various base rates shown in the Exhibit. Since nearly all yard labor is common labor and since nearly all unskilled labor receives a base rate, including the female workers, we believe that the base rates shown in Exhibit 6 afford the best source of finding the prevailing minimum wages.

A tabulation of these base rates reveals appreciable wage differentials in different sections of the Country. The Southern States show lower wage rates in general than the Northern States, while the highest rates are found in the Far West.

In the Southern States 4,423 workers are found at base rates ranging from 25 to 52 cents an hour. The heaviest concentration is found at 40 cents but below this rate are found 54.4% of the workers at base rates. We believe therefore that the prevailing minimum lies below 40 cents. At 32 cents, 563 workers are found, while 572 are found at 39 cents. At 34, 35 and 36 cents are found 620 workers or 14.2% of the total base rate employees. We believe that this middle group, although spread among three one-cent intervals, represents the central tendency of the distribution. It is, moreover, at the midpoint of the 10-cent interval from 30 to 40 cents wherein approximately 85% of the base-rate workers are found. We find accordingly that 35 cents an hour represents the prevailing minimum wage for the Southern States.

In the Northern States 20,023 are found at base rates ranging from 25 to 64 cents an hour. Here again the outstanding concentration takes place at 40 cents. In this instance, however, only 20.4% of all those at base rates fall below 40 cents, and these are scattered at different wage levels. We accordingly

find that 40 cents an hour is the prevailing minimum wage in the Northern States.

In the States of California, Oregon and Washington 2,651 workers are at the base rates and 21.9% are found at 50 cents. Only a few employees are found at rates below 50 cents. The latter rate in our opinion reflects and prevailing minimum wage for these States.

**Learners, Apprentices, Handicapped Workers**

Because of the concentration of common labor in the lower wage intervals no learner or apprentice question presents itself, and no evidence was given showing the need of a tolerance for super-annuated or handicapped workers (R 104).

In announcing the tentative finding of wages to interested parties Administrator Walling said:

There is enclosed herewith a copy of the recommendations In the Matter of the Prevailing Minimum Wages in the Paper and Pulp Industry, based on evidence taken at a public hearing held on March 27, 1939, in the Department of Labor, Washington, D. C.

The recommendations are presented to you now in order that you may have full opportunity to register your objection or approval before any decision is made by the Secretary of Labor.

Briefs may be filed with the Administrator, Department of Labor Building, Washington, D. C., within fourteen days of the date hereof. No form for the brief is prescribed but an original and four copies must be filed.

After the expiration of the fourteen-day period the entire record in the matter, including such briefs as have been filed, will be forwarded to the Secretary of Labor.

## Confers with Agriculture Dept.

An important conference was held in Washington on Friday June 9 in connection with the possibility of cotton rags being supplanted to some extent by raw cotton in the manufacture of writing paper. A committee headed by Joseph Schapiro, S. Schapiro & Sons, Inc., Baltimore, Md., including in addition, Louis Marcovitz, Loumar Textile By-Products, Inc., New York, President of the Associated Rag Industries a Division of the National Association of Waste Material Dealers, Inc.; Carlton B. Overton of Castle & Overton, Inc., New York; Ezra Frankel, Frankel Bros. & Co., Inc., Rochester, N. Y.; S. I. Lippman, P. Garvan, Inc., Hartford, Conn. and Chas. M. Haskins, managing director of N.A.W.M.D. was in conference with Lawrence Myers, chief, Marketing Section of the Department of Agriculture covering all phases of this very important matter.

The committee emphatically took the position at the conference that while it recognized that natural economic conditions might at any time destroy a market for raw material it wanted the assurance of the Department of Agriculture that the cotton rag market so far as the manufacture of paper was concerned would not be destroyed or unduly harmed by any artificial means such as the subsidizing of cotton by the government for paper purposes.

The committee was assured that before any such provision was made effective the industry would have another opportunity through the above mentioned committee to discuss the matter with the Department of Agriculture.

THIS MACHINE cuts PRODUCTION COSTS
Think of the extra production you'd get—the extra profit your company could make—if your machines could start out cold, turning out paper of acceptable quality and proper weight; and would continue hour in and hour out, without variation. The new improved Meyers Controller can give you that kind of production. Installed anywhere in your processing operation, it will maintain consistency of slush stock to an accuracy of ⅛ percent plus or minus from constant. Ahead of the paper machine, it will hold sheet weight to within 2½ percent of basis. A free folder tells how the Meyers Controller will save trouble and make money for you. Write for your copy.
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# Boston Paper Men Hold Outing

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., June 12, 1939—With approximately 110 present and favored by fair skies, the regular meeting and outing of the Boston Paper Trade Association, held at the Charles River Country Club, Newton Center, Mass., Monday, June 5, was a very happy occasion. Golf was an all day affair, while the other sports were run off in the afternoon. A buffet luncheon was served at the locker building from 11:30 on.

### New Members Elected

A brief business session was held after the dinner in the clubhouse, with Vice-President Robert M. Stone, in the absence of President John L. Hobson, presiding. The following new members were elected: Limited membership—Raymond C. Adams, River Raisin Paper Company, Boston; Nelson Feeley, Strathmore Paper Company, West Springfield, Mass., and Willard T. Libby, Claremont Paper Company, New York City. Regular membership—Arthur W. Frank, American Paper Goods Company, Kensington, Conn.; K. O. Hohle, Waterfalls Paper Company, New York City, Bert I. Reider, Victoria Paper Mills, Fulton, N. Y., and Gilbert T. Singleton, Robbins Paper Company, Boston.

### Prizes Awarded

Valuable prizes were awarded to winners in the outdoor sports, who were as follows: Horseshoes—first, Royal P. Teele; second, James Dwyer. Putting—first, Fred W. Main; second, Nathan S. Clark; guest prize, J. D. Starr. Bowling—first, T. Charles Casey; second, Earl S. Clark. The ball game resulted in a tie score of 10-10 between two picked nines. Charles Brown was captain of a team of which Clark and Lindenbergh were the battery and Paul Fraser of one of which Fraser and Masselink were the battery.

In the golf, a new name was added to the Association Championship Cup winners, that of A. D. Abercrombie for the first net in Class A. Other winners in Class A were: First gross, Norman Harrower; second net, Graham Blandy, II, third net, Ernest C. Calkin; fourth net, W. Edwin Porter, Jr. Class B—First Gross, Frederick G. Lockwood; first net, Fred B. Korbel; second net, E. M. Hughes; third net, R. B. Lombard. Best selected nine holes—Carl J. Knutson, Guest prize—Rev. Fred E. Bennett; second guest prize, Don Richardson. Kicker's handicap—L. E. Maglathlan. Prizes included handsome silver pieces. In the drawing for the bag of golf clubs, John F. Calligan was the lucky man.

### Committee and Officers

The outdoor sports committee was composed of A. T. Carter, chairman, Hubert W. Lockhart, F. W. Masselink and P. M. Beach.

The golf committee consisted of W. J. McLellan, chairman, E. D. Bement, Nelson Feeley, P. Richardson and W. Edwin Porter, Jr.

Officers of the association are John L. Hobson, president; Robert M. Stone, vice-president; Irving Esleek, second vice-president; T. Charles Casey, treasurer, and John H. Brewer, secretary.

Among those present were: Robert M. Stone, Irving Esleek, T. Charles Casey, John H. Brewer, Charles S. Proctor, John E. A. Hussey, Fred W. Main, Hubert L. Carter, F. Bendel Tracy, Carl J. Knutson, L. Ransom, F. H. Masselink, C. W. Harvey, N. W. Newton, C. J. Brown, R. P. Teele, C. Frederic Wellington, F. B. Cummings, W. Gardner Very, W. H. Loud, Hubert W. Lockhart, Lewis L. Claflin, Arthur W. Frank, Warren W. Young, E. D. Hay, Jas. J. Dinzer, F. T. Burkhardt, R. E. Hodgdon, Nelson Feeley, Don Richardson, J. W. T. Zink, E. M. Hughes, L. E. Maglathlan, W. E. Porter, T. W. Vivian, C. W. Nelson, C. W. Townsend, E. F. Burbank, W. J. McLellan, Rev. Fred D. Bennett, E. Sussenguth, J. Sweet, Geo. Hoyt, Ted Lockwood, C. A. L. Day, Sheldon C. Collins, Geo. F. Morrison, E. A. Crowell, P. B. Fraser, Jesse G. Swift, George Stuhr, R. W. Seymour, H. E. Chase, H. W. Robbins, G. T. Singleton, E. L. Wood, Fred B. Korbel, E. L. Cummings, W. N. Stetson, Jr., E. R. Leonhard, R. E. Ambrose, R. M. Read, Charles C. Shaw, R. F. Clayton, E. C. Calkin, John P. Ingalls, Joseph J. Lewis, D. Cheever, Jr., H. C. Thayer, Harold A. Allen, Earl S. Clark, Herbert A. Lindenbergh, Geo. W. Wise, Jr., J. T. Halloran, S. A. Trefrey, N. J. Patterson, Norman Kimball, B. H. Ballard, K. H. Ways, W. H. Andrew, J. E. Roach, Walker B. Holmes, Jack Mathers, F. O. Johnson, E. H. Little, Charles W. Fields, J. L. Munro, H. T. Bigelow, Graham Blandy, Norman Harrower, P. M. Beach, Ted Lyman, J. D. Starr, Jr., N. S. Clark, R. B. Lombard, E. L. Johnson, A. J. Mason, W. V. Shearer, Gorham Bliss, Geo. Olmstead, Jr., J. W. Whitney, O. T. Bracken, E. T. Simpson, John C. Calligan, W. F. Evans, H. C. Fowler, E. E. Ketcham, Alfred Carter, Arthur M. Burr, C. H. Dodge, and William C. Ross, E. D. Bennett and C. A. Estey.

## Stora Kopparbergs Expands

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 14, 1939—Stora Kopparbergs Bergslags A.B., Falun, one of the leading Swedish pulp concerns, is at present engaged in modernizing and expanding its sulphite mills, according to a report from the Office of the American Commercial Attache, Stockholm. The changes made will increase the plant's capacities by 10,000 metric tons a year, bringing the new capacity up to 35,000 metric tons. A modified digesting or cooking system with recovery of alkalis, somewhat similar to the methods employed in the United States and Canada, is being installed.

## Revised Production Figures

In presenting a report of the revised world production of newsprint figures for 1938 in the PAPER TRADE JOURNAL last week a typographical error in the opening sentence made the word "prepared" read "purchased" and naturally greatly confused the meaning of the sentence. This should have read: "R. S. Kellogg, secretary of the News Print Service Bureau has prepared the following corrected report giving Germany a total newsprint paper production of 512,000 tons in 1938 instead of the former report of 467,000 tons, making a world total last year of 7,555,000 tons, so far as can now be ascertained."

## Waste Paper Firms Not Service Plants

Arthur L. Fletcher, assistant administrator in charge of cooperation and enforcement, Wage and Hour Division, U. S. Department of Labor, today issued this statement:

"It has been called to my attention that certain waste paper concerns in New York have been operating on a 52-hour week without payment of at least time and a half for overtime in excess of 44 hours as required by the Fair Labor Standards Act of 1938.

"The reason cited by these concerns for their failure to observe the hours provisions of the Act was that they consider themselves service establishments and thereby exempt.

"I wish to call attention to Interpretative Bulletin No. 6, dealing with the exemption which these establishments are claiming. This bulletin prepared by our Legal Branch indicates the construction of the law which will guide the Administrator in the performance of his administrative duties unless he is directed otherwise by the authoritative ruling of the courts. It states: 'Service establishments as used in Section 13 (a) (2) may be considered to include generally that large miscellaneous assortment of business enterprises which are similar to retail establishments in character but which may not be accurately classified as such. Such an interpretation is suggested by the manner in which Section 13 (a) (2) is drafted. Service and retail establishments are considered in the same sentence, and the same criterion of intrastate commerce is made applicable to both. Typical examples of service establishments, akin to retail establishments, within the meaning of the exemption are restaurants, hotels, laundries, garages, barber shops, beauty parlors, and funeral homes.

"'Many of the characteristics outlined above with respect to the retail establishment are helpful in determining whether a given business is a "service establishment" within the meaning of Section 13 (a) (2). Service establishments are usually local in character and render a service to the ultimate consumer for direct consumption. The service is usually purchased in small quantities for private use rather than for industrial or business purposes.'

"It is clear that wastepaper concerns are not exempt under this Division's construction of 'service establishments.'

"Any reported violations of the provisions of the Fair Labor Standards Act on the part of waste paper dealers whose product finds its way into interstate commerce will be carefully investigated by this Division and, if the facts warrant, will be vigorously prosecuted.

"I am releasing this statement to the trade papers in order that no dealer may be innocently misled by this misconception of the service establishment exemption in the Fair Labor Standards Act."

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## Visit Plant of Byron Weston Co.

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., June 12, 1939—Clayton E. Waite, of John Carter & Co., Inc., recently escorted a group of his customers through the plant of the Byron Weston Company, Dalton, Mass., where they saw the process of paper-making.

CHASE BRASS TUBES
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Paper mill superintendents and engineers have learned through years of experience that they can depend on Chase Brass Tubes for paper mill rolls.

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PAPER TRADE JOURNAL
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Henry J. Berger
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Ronald G. Macdonald
Editor Technical Section

Lynne M. Lamm
Washington Correspondent

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## COMING EVENTS IN PAPER INDUSTRY

TECHNICAL ASSOCIATION OF THE PULP AND PAPER INDUSTRY, Fall Meeting, Syracuse Hotel, Syracuse, N. Y., September 12-14.

NEW ENGLAND SECTION. Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Roger Smith Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION. Technical Association of the Pulp and Paper Industry—Second Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION. Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

KALAMAZOO VALLEY SECTION. Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park, American Hotel, Kalamazoo, Mich.

AMERICAN PULP AND PAPER MILL SUPERINTENDENTS ASSOCIATION, Annual Convention, Wardman Park Hotel, Washington, D. C. June 13-15.

NATIONAL SAFETY COUNCIL, PAPER AND PULP SECTION, Annual Meeting, Atlantic City, N. J. October 16-20.

## LABOR ACT DEFECTS

Although public opinion during the past year has been at times sharply critical of the use organized labor has made of the new rights granted by reform laws, the prospect does not appear bright at this date for any important modification or clarification of the National Labor Relations Act. Revision of the Act is not included in the "must" program of Congress for legislation in the remainder of the session. However, Chairman Madden of the Labor Board has said that the Board is ready to grant employers the limited right to call for employee elections where two or more unions are contesting the right to represent workers in a plant.

In commenting on the Act, the *Washington Review* published by the Chamber of Commerce of the United States states in part: "Changes in the rules of the National Labor Relations Board to forestall amendments to the act appear to be the latest strategy of those opposing revision at this session of Congress. This interpretation is given to the recent announcement that the Board intends to reverse itself by giving employers the right to file election petitions, with certain safeguards attached and, possibly, by giving employers more time in which to answer complaints. Anti-revisionists are hoping to prolong the Congressional hearings, now in their seventh week, if possible. Unless there develops a more vigorous public demand for modification this stalling strategy is likely to succeed."

In a discussion of the National Labor Relations Act between business leaders and the President at the White House on June 1, Charles R. Hook, chairman of the National Association of Manufacturers was present, and on the same day Mr. Hook discussed the NLRA in a radio broadcast and said in part: "The enlightened employer of today has long realized that factories have become so large and the working organizations so complex that the right of employees to unite and speak as a unit for what they think would better their working conditions is entirely fair and just.

"This is not a brand new philosophy. And you may be surprised to know that the National Association of Manufacturers, which is so falsely and viciously accredited by friends of the present National Labor Relations Act with being unfriendly to labor, has for many years adopted and promoted a plank in its platform to the effect that, and I quote: 'Industrial Management recognizes that employees who wish to bargain collectively are entitled to do so in whatever form they determine through their own freely chosen representatives, and without intimidation or restraint from any source'.

"If the National Labor Relations Act and its administration were in full accord with these principles, then no one would have any just reason to raise his voice against it. Unfortunately for the people of this country the Act fails badly to comply with such democratic principles. Its preamble, which indicts the employer, and the employer alone, as being responsible for strikes and other forms of industrial strife, stamps it as being biased and one-sided. It assumes and pre-supposes the employer's denial of the right of employees to organize and bargain collectively. It protects the rights of organized employees only, it entirely ignores the rights of a large group of individuals who of their own free will do not wish to join a labor organization. It has been used to advance the interests of one labor organization as against another."

In asserting that the Act was hastily written in 1934, in a period when more legislation to control and regulate business was produced than in any other similar period in the history of our nation, Mr. Hook said in part: "Even though the National Labor Relations Act was conceived and drafted in haste, the Board through impartial administration might have lessened the injury done to the public interest. . . . Employers are not alone in contending that the administration of the Act is biased. The clearest evidence of this lies in the determined effort of the American Federation of Labor to change the Act and the present structure of the Board.

"Not the least of the complaints against the Labor Relations Board is the extent to which it has gone in holding that expressions by the employer to his employees with respect to collective bargaining, are a violation of the law. In more than 40 cases, it has been held that any statement the employer makes

to the employees, even at the latters' request, is bound to be an interference, a restraint, or coercion. So pronounced is its tendency to restrict the employers' freedom of speech, that the American Civil Liberties Union, which is composed of noted liberals with strong sympathies toward organized labor, recently filed a brief with the National Labor Relations Board protesting against the order of the Board in the Ford Motor case as a denial of the employer's constitutional right of free speech.

"Until there is a substantial amendment of the National Labor Relations Act, and the broad powers of the Board are limited and defined, we cannot reasonably expect any lessening of industrial strife or any appreciable improvement toward more stable labor conditions, with its resultant effect upon business recovery and employment."

## Government Paper Bids

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 14, 1939—The Government Printing Office has received the following bids for 25,685 pounds (175,000 sheets) of 75 per cent rag, No. 32 lithograph finish map paper; Mathers-Lamm Paper Company, 11.55 cents; Butler Company, 12.36 cents; Paper Corp. of U. S., 11.72 cents; Graham Paper Company (in part) 11.76 cents; Barton, Duer & Koch Paper Company, 11.27 cents; R. P. Andrews Paper Company, 11.87 cents; and Mudge Paper Company, 11.32 cents.

For 2,318 pounds (5,500 sheets) of 50 per cent rag, 44 x 64 lithograph finish map paper; Butler Company, 12.5 cents; Paper Corp. of U. S., 10.02 cents; Graham Paper Company, 11.05 cents; Barton, Duer & Koch Paper Company, 9.92 cents; and R. P. Andrews Paper Company, 11.17 cents.

For 8,305 pounds (55,000 sheets) of 75 per cent rag, 32½ x 43½ white lithograph finish map paper; Mathers-Lamm Paper Company, 11.55 cents; Butler Company, 12.36 cents; Paper Corp. of U. S., 11.87 cents; Graham Paper Company, 11.76 cents; Barton, Duer & Koch Paper Company, 11.27 cents; R. P. Andrews Paper Company, 11.87 cents; and Mudge Paper Company, 11.15 cents.

For 300,000 pounds of newsprint paper in 48 inches rolls; National Pulp and Paper Company, Inc., 2.425 cents; Paper Corp. of U. S., 2.925 cents; and Old Dominion Paper Company, 2.979 cents.

## Dr. W. F. Talbot Goes With Dennison

Dr. William F. Talbot has resigned his position as research chemist with the Dennison Manufacturing Company to accept a similar position with Arthur D. Little, Inc. Dr. Talbot received his Ph.D. from the State University of Iowa in 1929, following which he was employed by E. I. duPont de Nemours & Co. Inc., at their experimental station. From 1931 to 1937 he was with Gustavus J. Esselen, Inc.

Dr. Talbot is a member of the American Chemical Society, the American Institute of Chemical Engineers, and the Technical Association of the Pulp and Paper Industry.

He is also Vice-Chairman of the New England Section of TAPPI.

## Production Ratio Report

These statistics are based upon paper production reports to the American Paper and Pulp Association.

COMPARATIVE MONTHLY SUMMARIES[1]

| Months | 1939 | 1938 | 1937 | 1936 | 1935 | 1934 |
|---|---|---|---|---|---|---|
| January | 77.5% | 63.9% | 90.3% | 76.1% | 65.8% | ..... |
| February | 81.7% | 68.7% | 90.1% | 77.9% | 70.0% | ..... |
| March | 84.1% | 69.6% | 90.3% | 76.0% | 70.5% | ..... |
| April | 82.9% | 68.3% | 92.1% | 82.3% | 70.0% | ..... |
| May | 80.1% | 69.0% | 90.6% | 81.6% | 69.4% | ..... |
| June | ..... | 66.0% | 87.3% | 80.7% | 72.3% | ..... |
| July | ..... | 72.0% | 81.8% | 77.3% | 64.9% | ..... |
| August | ..... | 77.2% | 82.9% | 81.5% | 70.9% | ..... |
| September | ..... | 76.3% | 78.6% | 80.5% | 71.9% | 58.2% |
| October | ..... | 82.5% | 73.5% | 87.6% | 75.6% | 64.7% |
| November | ..... | 79.6% | 61.9% | 88.0% | 75.3% | 61.7% |
| December | ..... | 74.4% | 54.5% | 85.9% | 71.2% | 59.6% |
| Year Average | ..... | 72.3% | 80.6% | 81.3% | 70.5% | ..... |
| First 22 weeks | 81.3% | 67.7% | 90.4% | 78.9% | 69.0% | ..... |

COMPARATIVE WEEKLY SUMMARIES[1]

| CURRENT WEEKS, 1939 | | CORRESPONDING WEEKS, 1938 | |
|---|---|---|---|
| April 29 | 84.3% | April 30 | 70.4% |
| May 6 | 83.6% | May 7 | 67.1% |
| May 13 | 81.9% | May 14 | 67.7% |
| May 20 | 81.5% | May 21 | 69.7% |
| May 27 | 79.6% | May 28 | 71.4% |
| June 3 | 70.9% | June 4 | 62.5% |

The following statistics show the number of mills reporting by ratio groups:

| | Number of Mills Reporting—Current Weeks | | | | | |
|---|---|---|---|---|---|---|
| Ratio Limits | April 29, 1939 | May 6, 1939 | May 13, 1939 | May 20, 1939 | May 27, 1939 | June 3, 1939 |
| 0% to 50% | 59 | 60 | 63 | 62 | 54 | 65 |
| 51% to 100% | 247 | 243 | 240 | 238 | 237 | 135 |
| Total Mills Reporting | 306 | 303 | 303 | 300 | 291 | 200 |

PAPERBOARD OPERATING RATIOS

Per cents of operation based on "Inch-Hours" reported to the National Paperboard Association.

| Year | Jan. | Feb. | Mar. | Apr. | May | June | July |
|---|---|---|---|---|---|---|---|
| 1935 | 62% | 68% | 68% | 63% | 61% | 66% | 62% |
| 1936 | 62% | 67% | 67% | 70% | 69% | 70% | 69% |
| 1937 | 80% | 86% | 86% | 88% | 85% | 77% | 66% |
| 1938 | 54% | 60% | 61% | 57% | 58% | 56% | 57% |
| 1939 | 60% | 67% | 71% | 69% | .... | .... | .... |

| Year | Aug. | Sept. | Oct. | Nov. | Dec. | Year Avg. |
|---|---|---|---|---|---|---|
| 1935 | 67% | 71% | 77% | 71% | 61% | 66% |
| 1936 | 75% | 78% | 82% | 80% | 74% | 72% |
| 1937 | 74% | 69% | 65% | 55% | 45% | 73% |
| 1938 | 66% | 66% | 70% | 65% | 59% | 61% |

Week end. Apr. 29, 1939—68%
Week end. May 6, 1939—68%
Week end. May 13, 1939—65%
Week end. May 20, 1939—65%
Week end. May 27, 1939—66%
Week end. June 3, 1939—57%

[1] Production-capacity ratios are based upon six-day capacity ratings which are adjusted periodically to correspond with the ratings reported by individual companies. Ratios are subject to revision until all reports are received.

## Discuss Projected Mill at Corinth

According to the *Corinthian* of Corinth, Miss., "A 'closed conference' of Corinth business and professional men and ex-Governor Gordon Browning and others interested in the proposed pulp mill to be located near Burnsville, was held at the city hall Friday when some phases of the setup were discussed.

"Newspaper men were not invited to the meeting, but it is understood that the financial setup was the subject for discussion at the meeting, although nothing was given out regarding the discussions after the gathering.

"Those connected with the venture have issued no public statement but it is reported that practically all of the pine-growing lands necessary for establishment of the plant have been leased to the setup and all that remains is disposal of a sufficient amount of stock locally to insure a loan from the RFC or some other federal lending agency from which it is proposed to secure approximately half of the capital with which to operate the mill."

# *Do your envelopes have* "Hiding Power"?

If not, the true function of an envelope is absent. While "hiding power" or opacity is not the sole factor in envelope quality, it is one of the characteristics necessary for high grade appearance and performance.

Envelope stock is only one of the many papers that can be economically opacified and whitened by the use of Zinc Sulphide Pigment.

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160 FRONT ST., NEW YORK

ZINC SULPHIDE PIGMENTS IN PAPE

Section of the
Technical Association of the Pulp and Paper Industry

Edited by Ronald G. Macdonald, Secretary

# Review Of Paper Industry Literature

**Copies of United States Patents can be obtained from the United States Patent Office, Washington, D. C. for 10 cents each. Send currency, not stamps.**

## Sizing

**Montan Wax Soaps.** Papier-Ztg. 63, no. 41: 830-1 (May 21, 1938); B. I. P. C. 8:437.—Referring to sizing recipes calling for the use of montan wax, a formula is given for calculating the amount of caustic soda required for the complete saponification of the wax which varies with its saponification number. The formula reads: saponification number times quantity of wax divided by 1.4 gives the quantity of caustic required in grams. Attention is drawn to the fact that for durable sizes and impregnations, however, a certain amount (30-50 per cent) of unsaponified wax in the size is required.

**Action of Iron and Titanium Salts in Aluminum Sulfate Used in Papermaking.** Gregorio Kamlet. Rev. brasil. chim. (Sao Paulo) 5:185-186 (1938); C. A. 32:6057.—Ferric salts discolor paper; ferrous salts remain dissolved in the water and do not precipitate on the paper; hence, they have no harm if present in small quantities. Titanium salts, present in aluminum sulfate made from titanium-containing minerals, have a beneficial whitening action.—C.J.W.

**Development of Artificial Organic Materials.** W. Voss. Papier-Fabr. 36, no. 3: 25-29 (January 14, 1938).—The author first discusses the deficiencies of natural resins, such as copal, etc. The lack of uniformity and the uncertainty of supply of natural resins encouraged the development of artificial resins. A short description of the more important of these artificial resins is given, included are Bakelite, celluloid, styrol, glyptal and cumaron resins. In conclusion the advances in manufacturing procedure and equipment are mentioned.—J.F.O.

**Concerning the Cooking of Size in Earlier Times.** Alfred Schulte. Papier-Fabr. 35, no. 51: 518-20 (Dec. 17, 1937).—Description of the making of the size from lamb bones for the manutacture of paper during the middle of the nineteenth century.—J.F.O.

**Process for the Manufacture of White, Glossy Paper Suitable for Printing.** Zschimmer & Schwarz Chemische Fabrik Dolau. Ger. pat. 651,776 (Dec. 29, 1935).—A mixture of fatty acid barium and dispersed rosin or rosin size containing free rosin is used.—J.F.O.

## Fillers

**The Distribution of Fillers in Loaded Papers.** Franz Schutz. Papier-Fabr. 35, no. 51: 516-18 (Dec. 17, 1937).—Since paper makers do not agree as to the distribution of filler in loaded papers, work was undertaken at this laboratory to determine this. A method was first worked out to separate the paper into the three layers, top, wire side and middle; so that ash tests could be made of each layer. Papers of different weights, fiber and filler content were used for the test. Results showed that in the majority of papers, the preponderance of filler was on the top side, although there were some with more filler on the wire side and some papers had the filler evenly distributed throughout the entire thickness. The author then discussed the relation of filler distribution in the paper to the various types of printing, mentioning that the wire side is best for a certain type and the top side is best for another type of printing.—J.F.O.

**Production of Suspensions of Pigments.** British Titan Products Co., Ltd. Brit. pat. 471,827 (July 22, 1936).—Titanium pigments are incorporated into a thermoplastic material (paraffin wax) in the fluid or semi-fluid state or in solution, in presence of a small amount of organic dispersing agent (cholesterol, lecithin), predispersed in lanolin or petroleum jelly if desired, to give non-aqueous impregnants for rendering fibrous materials such as paper impermeable.—A.P.-C.

## Drying

**Temperature of Drying Cylinders.** Wochbl. Papierfabr. 69, no. 12:262; no. 13:281; no. 16:349 (March 19, 26, April 16, 1938); B. I. P. C. 8:427.—Board machine felts are much shorter than paper machine felts; hence, their wear is naturally greater. The chief raw material in cardboard manufacture is waste paper which gives a slow pulp, hard to dewater and of slimy consistency. The felts soil, therefore, to a much greater extent, and require a much more thorough treatment for conditioning. This is usually done by felt whippers under addition of plenty of water. This method is effective where sufficient space is available. The most careful cleaning, apart from removing and washing by hand, is accomplished by the use of rubber roll felt conditioners. Their use is, however, not yet as common in board as in Fourdrinier machines.—C.J.W.

**Heating the Pulp Web on Pulp Drying Machines.** S.P.H.E. Holgersson. Brit. pat. 481,237, (May 7, 1937).—Steam is supplied to a distribution box in such a way that its kinetic energy is recovered as heat; it then issues to make contact with the web at a point very close to the press rolls so that the hot, condensed water from the steam presses out the cold water from the web on the other side.—A.P.-C.

**Device for the Drying of a Web of Paper.** Firma J. Fischer, Nordhausen. Ger. pat. 652,238 (April 21, 1936).—A current of air is blown uniformly over both sides of the sheet of paper.—J.F.O.

**Automatic Device for the Regulating of a Uniform Water Content of a Web of Stock, Especially on Paper and Board Machines.** Societe Francaise der Regulateurs Universels Arca, Paris. Ger. pat. 653,879 (Feb. 17, 1933).—The amount of steam to the drying cylinders is regulated according to the moisture content of the sheet.—J.F.O.

**The Drying of Webs of Pulp, Ground Wood, Board, Porous Paper and Similar Materials.** O. Merksens, Duren. Aust. pat. 151,001 (May 15, 1937). —The material is dried by means of dry air which is sucked through the sheet.—J.F.O.

### Machinery

**Pretreatment of Wood for Barking by Flushing with Water or Drum Barking.** Karlstroem. Svensk Papperstidn. 41, no. 12:387 (June 30, 1938); B. I. P. C. 8:458.—With reference to Bildt's article (Svensk Papperstidn. 41, no. 8: 261-264 (1938)) the author discusses some experiments of similar nature. An experimental barking plant is described which consisted of a number of compartments in which the wood was soaked in water of 25°C. for 20-30 hours. The bark could then be readily rinsed off with water sprays of 19 mm. under a pressure of 15 kg. This method proved both economical and practical as long as non-floated wood stored for one and a half years or longer was used. When this period was shortened to 7-9 months or less the bark could not be loosened, even when the water temperature was doubled. When the wood was heated with steam, the bark became loose, but as soon as the wood came into contact with air, it started to stick again. The problem was finally solved by soaking steam-treated wood in ordinary water. The method is covered by several Swedish patents. The wood does not reach the chipper with a higher temperature than 20 C°., hence no decrease in strength properties was noticed. Discoloration of pulp started when the wood was treated at temperatures higher than 80°C.—C.J.W.

**Barking Drum.** G. A. Eiritz, Skutskar. Swed. pat. 88,679 (Dec. 17, 1935).—The drum consists of two cylinders, each incomplete in itself, but when partly rotated form a complete cylinder. In this manner, the barking drum can be loaded and unloaded much faster.—J.F.O.

**Method for Barking the Entire Log or After it Has Been Cut Into Several Smaller Logs.** A. B. Pierre, Jarpen. Finn. pat. 17,659 (Jan. 5, 1934).—After the logs are pre-treated with a concentrated or dilute cooking liquor, for example, sulphite liquor; they are treated with a gaseous basic material to neutralize any liquor adhering thereto.—J.F.O.

**Device for Filling Containers with Material Cut into Pieces, Especially Horizontal Pulp Digestors with Wood Chips.** J. Pohl. Steinbockwerk. Ger. pat. 653,630 (May 7, 1936).—The device consists of a centrifugal wheel revolving around a horizontal axis. The wheel is arranged so that it will operate under the container opening and it also is provided with a vertical axis.—J.F.O.

## Bristol Co. Joins TAPPI

The executive committee of the Technical Association of the Pulp and Paper Industry announces that the Bristol Company of Waterbury, Connecticut has become a company member of TAPPI.

The Bristol Company was founded in 1889 by William H. Bristol with the help of his brother, Franklin B. Bristol. In 1892 Prof. Bristol's thoughts turned to the need in industry of a recording instrument that would give a continuous graphic record of the pressure of air, gas or steam confined in a closed vessel and his experiments were devoted to various designs of modified Bourdon tubes. Out of this research was developed a sensitive actuating element. With subsequent improvements this has been perfected into the popular flat metal coiled tube or helical measuring element now employed in Bristol instruments. Then followed the temperature recorder and a complete line of electrical measuring recorders. In 1904 he developed the first practical pyrometer which utilized a base metal (copper-constantan instead of platinum-platinum rhodium) thermocouple.

Some of the products manufactured by this firm today are recording gages for pressure and vacuum, controllers, thermometers, pyrometers, psychrometers, voltmeters, millivoltmeters, watt meters, frequency meters, humidigraphs, thermohumidigraphs, radii averaging instruments, valves and potentiometers.

The company maintains 12 branch offices in the United States and others in foreign countries. The officers of the firm are Howard H. Bristol, President; Carlton W. Bristol, Vice President and Chief Engineer; Henry L. Griggs, Vice President and Sales Director; L. G. Bean, Sales Manager: Herman Koester, Vice President and Factory Manager; Austin L. Adams, Treasurer; and Samuel R. Bristol, Secretary.

G. P. Lonergan, manager, is the company's official representative in the Technical Association.

## Delaware Valley TAPPI Dinner-Dance

The Delaware Valley Section of the Technical Association of the Pulp and Paper Industry held its closing meeting of the season with golf in the afternoon of Friday, June 9, and a dinner-dance in the evening, at the Bala Country Club, Philadelphia.

The committee in charge of events for the day were Walter Quinn, Container Corporation of America for dinner reservations; Roy Underdown, American Dyewood Company; F. W. Brainerd, Scott Paper Company; William Marshall, Mathieson Alkali Works; Edward Heckman, Goodrich Silvertown Stores, and Charles Shubert, Dill & Collins Inc., for the golf reservations.

Chairman Connor of the Delaware Valley Section extended a welcome to the members, guests and ladies. Included among those present were: M. B. Pineo, F. W. Brainerd, Ed. Engel, W. S. Corbin, J. d'A. Clark, S. P. Moore, Paul Hass, R. M. Young, Charles Shubert, Ronald Atwater, W. J. Gane, A. McCalmont, William Reynolds, J. F. Halladay, Walter Quinn, S. J. Reynolds, J. Shaw, Hugo Hanson, W. M. Shoemaker, R. Nelson, C. M. Connor, H. Hulmes, Mr. Helm, Jacob Edge, A. M. Cooper, A. R. Boyd, Jesse Good, V. Jacobsen, P. Loddengaard, George Martin, W. Mayer, H. Earle, J. Roslund, J. C. Schmidt, L. E. Smith, R. Tutt, Jr.; J. Tuttle, R. H. Underdown, W. Wendt, A. Zabenko, Mr. Friel, John Voller, H. Hoffman, Mr. Gunther, Leslie Justice, R. T. Bingham, Marc Rolland, B. P. Steele, T. W. Toovey, C. E. Barnard, W. R. Maull and V. F. Waters of TAPPI.

# The Effect of Hydration Upon the Rate of Drying of Paper Sheets*

By J. G. L. Caulfield[1], L. C. Jenness[2] and H. G. Macklem[3]


## Abstract

*A correlation between drying rate and freeness is developed, depending upon a shift of the critical moisture content toward higher free moisture contents with increasing hydration, resulting in decrease in average drying rate for a given removal of moisture.*

*There is presented a calculation of the time required during the period of constant rate drying and during the two periods in which the rate is falling, for a range of values of freeness.*


Several variables have been recognized as influencing the drying rate of paper sheets, among others temperature, velocity and humidity of air, and the thickness of the sheet. As a preliminary step toward further drying studies now in progress, the degree of hydration of the pulp composing the sheet seemed worthy of investigation, since this might be a variable of some importance in the drying operation. It has frequently been observed in a qualitative manner that a slow sheet dried with more difficulty than a free one, but no reason has ever been apparent, nor has the opinion been unanimous.

## Experimental Procedure

A series of samples of commercial bleached sulphite pulp was accordingly prepared, the freeness of which, as measured by means of the Williams standard apparatus, varied between 15 and 1380. The sheets were formed so that the dry weights were as nearly as possible equal, and were pressed to an approximately equal water content. They were then dried under constant conditions of temperature, humidity and air circulation, using an oven with a balance so mounted that weighings could be made without disturbing oven or sample. Time was taken at definite weight intervals until the sample showed no further decrease in weight.

* Presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Roosevelt Hotel, New York, N. Y., Feb. 20-23, 1939.

[1] Assistant Professor of Pulp and Paper Technology, University of Maine.

[2] Associate Professor of Chemical Engineering, University of Maine.

[3] Department of Pulp and Paper Technology, University of Maine.

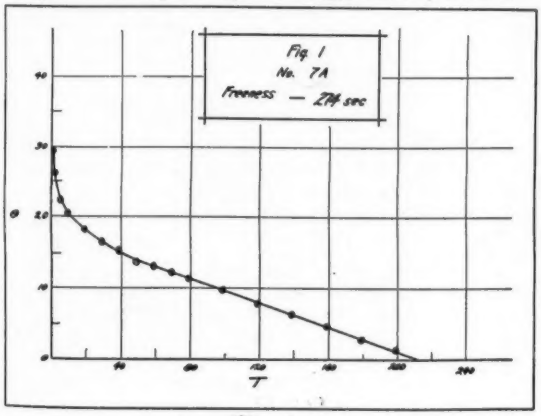


FIG. 1.

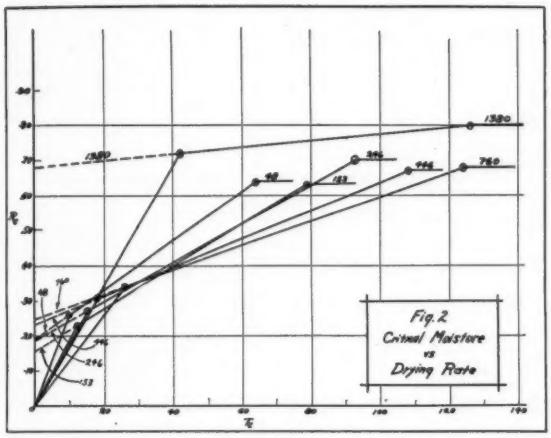


FIG. 2.

## Discussion

The generally accepted theories of drying under such constant conditions *(1, 2, 3)* suppose that the drying cycle, for such materials as a paper sheet, is divided into three distinct periods provided the initial moisture content is sufficiently high. The first of these periods is one of constant rate, during which diffusion of water from the inside of the sheet is sufficiently rapid to keep up with the evaporative rate of the drying air. Since this evaporative rate must be constant for constant drying conditions, the rate of removal of water from the sheet remains constant. At some moisture content, the value of which depends upon the material dried and the drying conditions, the point is reached at which the rate of diffusion can no longer keep up with the evaporative rate, and from this point on the rate of moisture removal gradually declines until a relatively low moisture content is reached. Here a second critical point can be recognized, the rate undergoing a further decrease, and the remaining water being removed at a rapidly decreasing rate until the equilibrium value is reached. The total time to dry between a high and a low value of moisture will naturally depend upon the occurrence of these critical points early or late in the drying cycle. If the critical points are reached when the sheet is relatively dry, the greater part of the moisture will have been removed at a high constant rate. If the critical points occur while the water content is still considerable, much of the drying must be in the lower rate periods.

## Experimental Data

The data obtained in the tests described were accordingly plotted as time versus free moisture content and the curves examined for breaks in drying rate in order to fix the free moisture contents at

**TABLE I—FREENESS VS. RATES AND PER CENT MOISTURE AT CRITICAL POINTS**

| Run No. | Freeness (Sec.) | First Critical Point $T_{c1}$ Per cent | First Critical Point Rate | Second Critical Point $T_{c2}$ Per cent | Second Critical Point Rate |
|---|---|---|---|---|---|
| 6 B ..... | 1380 | 128 | .805 | 40 | .726 |
| 1 C ..... | 760 | 124 | .684 | 26 | .340 |
| 2 A ..... | 490 | 100 | .691 | 20 | .290 |
| 4 C ..... | 402 | 116 | .659 | 17 | .300 |
| 7 A ..... | 274 | 100 | .778 | 13 | .330 |
| 9 B ..... | 241 | 88 | .682 | 17 | .280 |
| 8 A ..... | 222 | 90 | .658 | 13 | .240 |
| 6 A ..... | 177 | 84 | .557 | 13 | .222 |
| 5 A ..... | 170 | 79 | .626 | 16 | .222 |
| 6 D ..... | 148 | 78 | .725 | 10 | .220 |
| 7 B ..... | 125 | 74 | .617 | 11 | .250 |
| 8 B ..... | 90 | 62 | .609 | 15 | .250 |
| 5 B ..... | 83 | 55 | .772 | 9 | .300 |
| 4 A ..... | 82 | 71 | .555 | 6 | .170 |
| 5 D ..... | 65 | 67 | .644 | 7 | .210 |
| 4 B ..... | 63 | 70 | .780 | 9 | .210 |
| 3 A ..... | 40 | 58 | .426 | 5 | .150 |
| 3 B ..... | 41 | 65 | .567 | 9 | .180 |
| 4 D ..... | 29 | 63 | .745 | 12 | .340 |
| 3 D ..... | 26 | 61 | .720 | 12 | .300 |
| 2 D ..... | 15 | 49 | .662 | 14 | .260 |

**TABLE II—PER CENT MOISTURE AT CRITICAL POINTS VS. FREENESS AVERAGED IN GROUPS**

| | | | | | | |
|---|---|---|---|---|---|---|
| Freeness (Sec.) | 1380 | 760 | 446 | 246 | 153 | 48 |
| Per cent Moisture $T_{c1}$ | 128 | 124 | 108 | 93 | 79 | 64 |
| Per cent Moisture $T_{c2}$ | 40 | 26 | 18.5 | 14.5 | 12.5 | 10 |

**TABLE III—RATE, SLOPE AND TIME VS. FREENESS AVERAGED IN GROUPS**

| Freeness (Sec.) | 1380 | 760 | 446 | 246 | 153 | 48 |
|---|---|---|---|---|---|---|
| Rate ($R_c$-1) | .805 | .684 | .675 | .706 | .632 | .653 |
| Rate ($R_c$-2) | .720 | .340 | .295 | .283 | .226 | .255 |
| Slope m1 | .097 | .351 | .424 | .538 | .612 | .737 |
| Slope m2 | 1.80 | 1.31 | 1.59 | 1.63 | 1.81 | 2.55 |
| Time $\theta_c$ (min.) | 2.7 | 3.8 | 6.2 | 8.1 | 11.2 | 13.2 |
| Time $\theta_{f1}$ | 11.8 | 20.0 | 19.1 | 16.8 | 16.1 | 12.8 |
| Time $\theta_{f2}$ | 11.5 | 12.5 | 8.2 | 6.5 | 5.1 | 2.7 |
| Total Time $\theta_T$ | 26.0 | 36.3 | 33.5 | 31.4 | 32.4 | 28.7 |

which the two critical points occurred. To verify the determination of these points the same data were plotted as rate, in terms of grams of water removed per minute, against free moisture (Table 1, and Figs. 1 and 2). As may be seen by reference to Table II, Fig. 3, one effect of increased hydration is to displace the first critical point, that moisture content at which the first decrease in drying rate occurs, toward higher moisture content. This results in the time required for a given moisture removal being increased, provided that the upper and lower limits of moisture lie on opposite sides of the critical points. A smaller part of the water is removed in the constant rate period and a larger part in the period of declining rate.

The second critical point is also shifted toward higher moisture contents by increased hydration (Table II, and Fig. 3). The slow sheet, however, enters these periods of drying at higher rates than does the free sheet. This compensates in some degree for the greater percentage of moisture which must be removed from the slow sheet at the low rates prevailing. Reference to Tables II and III will show that a sheet whose freeness was 1380 entered the drying periods at moisture contents of 128 and 40 per cent respectively, while a sheet whose freeness was 760 entered the same periods at moisture contents of 124 and 26 per cent. The rates during these periods were, however, sufficiently greater in the case of the slow sheet that the times spent in these periods were actually less. Only at very high values of freeness can this be possible, and in general, time in the last periods increases with hydration.

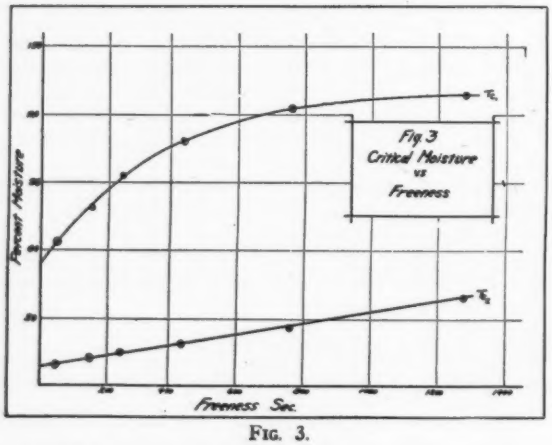


FIG. 3.

The effect of the shift of the two critical points upon drying time is indicated in Table III, where total time required to dry from 150 per cent to five per cent moisture on a dry basis is tabulated. Total time is shown, as well as time spent in each of the three drying periods.

Time was calculated in the following manner for the constant rate period:

$$\theta_c = \frac{W}{R_c}$$

where $\theta_c$ = Time in constant rate, minutes
$W$ = Weight of water removed, grams
$R_c$ = Rate of removal, grams per minute

Time in the falling rate periods could only be calculated by graphical integration of the rate curve unless the curves connecting the critical points with each other, and the second critical moisture content with the origin could be considered as straight lines. That the assumption of straight lines was justified was demonstrated by obtaining the slopes of the time versus free moisture curves for a number of values of free moisture and plotting slope against free moisture. Two straight lines which intersected at the lower critical point resulted, indicating constancy of slope for each section of the rate curve.

The following modification of the usual falling rate equation was then derived:

Let $W$ = weight of water removed, grams
$\theta$ = time, minutes
$D$ = weight dry fiber, grams
$T$ = free moisture content, per cent dry basis
$m$ = slope of any straight line on rate versus moisture diagram
$b$ = rate intercept of the same straight line
$A$ = area of sheet, square feet

$$\frac{-dW}{A\,d\theta} = mT + b$$

but $dW = D\,dT$

$$\frac{-D\,dT}{A\,d\theta} = mT + b$$

$$\frac{-D}{A}\int \frac{dT}{mT + b} = \int d\theta$$

Integrating between limits $T_1$, $T_2$ and $\theta_1$, $\theta_2$

$$\frac{D}{A} \cdot \frac{1}{m} \ln \frac{mT_1 + b}{mT_2 + b} = \theta_2 - \theta_1 = \theta_f$$

Since m is based on an exposed area of 0.833 square feet, if the times are also calculated for the same area the equation simplifies to

$$\theta_f = 2.3 \frac{D}{m} \log \frac{mT_1 + b}{mT_2 + b}$$

In the first falling rate period "b" is the value of the intercept of the line on the rate axis. Since the curve must pass through the origin at the end of the second falling rate period, the equation for this period reduces to

$$\theta_f = 2.3 \frac{D}{m} \log \frac{T_1}{T_2}$$

In the event of several falling rate periods this method of solution would approximate a graphical integration.

Times so calculated, together with total time to dry from 150 per cent to five per cent moisture, based upon a dry sample of ten grams and an area of 0.833 square feet are presented in Table III.

In an attempt to clarify the mechanism of water removal freeness was plotted against the slopes in the falling rate periods—these slopes being a measure of the rate of change of the rate of evaporation. With the exception of the slopes in the second periods of freeness 1380 the data in Table III show a slower decrease of rate in both periods the higher the freeness. It is believed that the abnormal behavior of the sample of freeness 1380 may be due to a combination of high freeness and shortened fibers caused by beating.

If the slopes in the first period are plotted against the square root of the freeness, Fig. 5, a straight line results showing a relationship of the form

$$(1)\quad m_1 = k\,(F)^{\frac{1}{2}} + b$$

and if the logarithms of the slopes in the second period are plotted against logarithms of freeness, Fig. 6, a straight line results showing a relationship of the form.

$$(2)\quad m_2 = c\,F^d$$

Since the "m's" are a direct measure of the change of evaporative rates with moisture content the equations indicate a different controlling cause of the evaporative rates.

It is interesting to note that equation (2) is of the same form as Freundlich's equation for the adsorption of a quantity of gas (x) on a unit amount of solid under a gas pressure (p) namely

$$p = k\,x^a$$

Since the freeness is an indirect measure of the amount of water fixed in the fiber, it might be reasoned by analogy that the partial pressure of this water was the controlling influence on $m_2$,—the evaporative rate in the second falling rate period,—and that that period constituted removal of adsorbed water.

A plot of the first critical point against freeness is shown in Fig. 3. When the same data is plotted using logarithmic coordinates as shown in Fig. 4, a straight line results. This indicates that the relationship between freeness and the first critical point is expressed for this case as

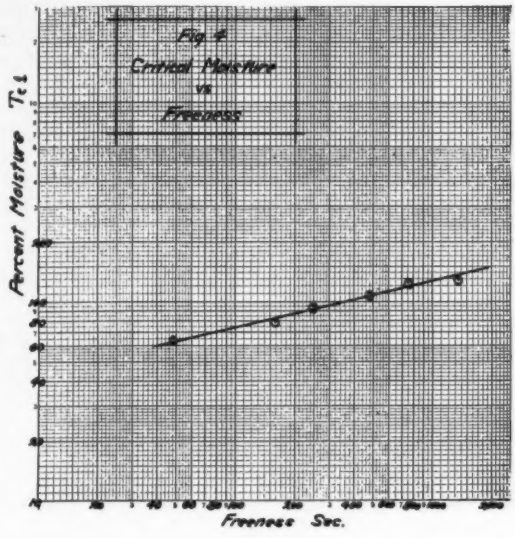


FIG 4.

$$(3)\quad T_{c1} = b\,F^k$$

where $T_{c1}$ = free moisture at the first critical point
$F$ = freeness, seconds
$b$ = constant
$k$ = constant

or taking the logarithms of each side,

$$\log T_{c1} = k \log F + \log b$$

To evaluate the constants b and k, reference to the logarithmic plot gives as a value of the slope of the line 0.223 which equals k. Letting F equal 1 makes the whole term involving F equal zero, and b may be read as the y-intercept, equal to 45. Equation (3) is therefore,

$$T_{c1} = 45\,F^{0.223}$$

The second critical point versus freeness is also shown in Fig. 1 and may be regarded as a straight line the equation of which is

$$(4)\quad T_{c2} = 0.025\,F + 9$$

While these exact relationships could not be expected to apply to conditions other than those maintained in this particular set of tests, it seems not unlikely that some similar correlation exists for any given drying condition. In any case it appears that hydration constitutes a variable of some importance in the drying operation, and that its influence is capable of being predicted for a given set of drying conditions.

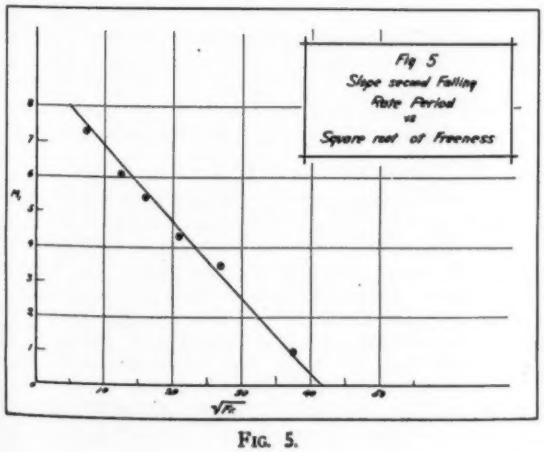


FIG. 5.

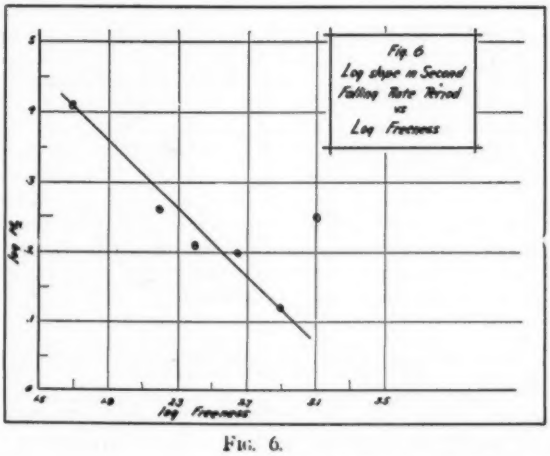


FIG. 6.

### Conclusions

(1) In the drying rate curves for sulphite pulp sheets the two critical moisture contents are displaced toward higher values by increased hydration.

(2) The displacement of the first critical point under these drying conditions follows the equation

$$T_{c1} = 45\ F^{0.233}$$

(3) The displacement of the second critical point under these drying conditions follows the equation

$$T_{c2} = 0.025\ F - 9.0$$

(4) The rate of change of the drying rate in the two falling rate periods has been found to be a different function of the freeness in each period.

(5) The equation for this function in the first period is

$$m_1 = k\ F^{1/6} + b$$

(6) The equation for this function in the second period is

$$m_2 = c\ F^{d}$$

### Literature Cited

(1) Lewis, Walker, McAdams, and Gilliland, Principles of Chemical Engineering, New York, McGraw-Hill Book Co., 1937.
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# A Study of the Odors Generated in the Manufacture of Kraft Paper*

By H. C. Dudley [1] and J. M. DallaValle [2]

### Abstract

*This report deals with the results of a study made on the obnoxious odors generated in the manufacture of kraft paper. There are three sources of obnoxious odors due to processes being carried on in the plant studied, caused by (1) production of $H_2S$, (2) production of volatile organic sulphur compounds, and (3) release of large quantities of chemical smoke which contains sodium sulphate, sodium sulphide, traces of $H_2S$, and large quantities of carbon and organic materials.*

*In evaluating the sources of odors and their contribution to the general disagreeable conditions which arise downwind from the plant due to these odors, it may be stated that (1) the amount of $H_2S$ which is released from the plant is relatively small and may be considered of no consequence in causing any odor except at the point of origin in certain buildings; (2) the odor produced by the release of organic sulphur vapors from the pulp digesters and the vapors from the turpentine condensers is very disagreeable at the point of release; however, the quantity of such vapors is probably not sufficient to cause marked odors under normal operating conditions at any great distance from the plant; and (3) the greatest and, it seems probable, the only major contributing factor to the obnoxious conditions arising from the operations of the plant within a mile or more is due to the vast quantities of materials which are blown out of the stacks. In a plant manufacturing 300 tons per day of kraft paper, this smoke is estimated to contain, under normal operating conditions, 18,000 pounds of sodium sulphate per twenty-four-hours. In addition to this quantity of material, there is much carbon, partially carbonized organic matter, as well as a mixture of somewhat volatile oils. This smoke is of rather low temperature and soon reaches the ground, being spread over an area of several square miles. The peculiar sweetish and somewhat sickening odor seems to be due to the organic constituents.*

*Methods of study are recommended which may lead to the control of the odor-generating processes. The possibilities of electrical precipitators to prevent an excess of chemical smoke are stressed.*

That the odors generated by some paper mills and pulp plants bring about certain unpleasant conditions in areas immediately surrounding the plants can not be denied. But superficial examination of these areas will reveal that the odors, and in some cases chemical smokes, are a general nuisance. Whether these conditions are unhealthful is an unsolved problem but the eradication of the odor nuisances will undoubtedly cause the areas to be more pleasant for all concerned. It is our purpose in this paper to show the results of a study of a plant manufacturing heavy kraft paper and bring to the attention of all paper mill operators suggestions as to methods of control of odors and chemical smokes.

An article covering the material contained in this paper has been published by the U. S. Public Health Service in the Public Health Reports, Vol. 54, (1939).

The control of industrial odors involves difficulties not often susceptible to simple methods of attack. One of the chief reasons for the difficulties encountered is due to the low threshold values to which the nose is sensitive. Equally important is the fact that industrial processes giving rise to odor nuisances are usually of such complexity as to require costly apparatus for removal of the sources of odor. No generalization of odor nuisance problems is possible without complete knowledge of processes causing them, and each problem usually requires separate treatment. However, there are certain basic principles applying to the control of odor nuisances.

### Threshold Limit of Certain Odors

The nose is very sensitive to minute traces of substances present in air. Organic substances, usually containing sulphur, appear to be most obnoxious to residents near plants producing them, but certain other gases, such as sulphur dioxide and chlorine, are frequently troublesome. In Table I is given a list of threshold values of some vapors and gases. The concentrations shown in this table represent those which, when present in air, produce a noticeable odor. *(1, 3).* At lower concentrations the average person will note little or no odor. It will be seen that

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[1] Associate Chemist, Division of Industrial Hygiene, National Institute of Health, U. S. Public Health Service, Treasury Department, Washington, D. C.
[2] Past Assistant Sanitary Engineer, U. S. Public Health Service.

the values are remarkably low and indicate the difficulties which are inherent in attempts instituted for their control and quantitative estimation.

### Manufacture of Kraft Paper

Kraft paper is that type of brown paper commonly used in retail stores for the wrapping of packages. Heavier grades of this type of paper are used in the production of heavy paper shipping containers and cartons. In the plant at which this study was made a heavy kraft paper was manufactured and shipped elsewhere for the fabrication of shipping cartons.

To understand the origin of odors generated in the manufacture of kraft paper, it is necessary to outline the process used. Kraft plants must be considered in two parts, namely, first, the preparation of logs and their digestion, and, secondly, the recovery and processing of chemicals used. The odor-producing substances when exhausted or blown into the atmosphere cover a wide area and are a source of complaint.

Four-foot pine logs are first debarked and then cut into chips. The undried chips are placed in large digesters where they are cooked with live steam under pressure of 125 lb. per sq. in. for two to three hours. The digester liquor contains sodium hydroxide (NaOH) and sodium sulphide ($Na_2S$). This treatment causes a disintegration of the wood into individual fibers and subsequent solution of resins, volatile oils, and pine tar. As the digestion continues, steam is led into the bottom of the digesters and is released near the top. This exhaust steam from the digesters is condensed and large quantities of crude odorous turpentine and other mixed essential oils are partially recovered. After the digestion is complete the contents of the vessel are transferred to special tanks and the digestion liquor is drawn off. The pulp is now washed, screened, and passed either to storage chests or to the paper mill, where, after further treatment to insure the complete disintegration of all fibers, the pulp is passed through rolls and the finished product produced.

It will be noted from the preceding discussion that after digestion of the chips, the digestion liquor is drawn off the cooked pulp. In order to make this process commercially economical, the sodium sulphate, sodium hydroxide, and sodium sulphide remaining in this solution must be recovered and reused. This black liquor is now passed into vacuum evaporators where sufficient water is removed so that the content of total solids is 45 to 50 per cent. This heavy, viscous liquid is led into drying furnaces where it is dried by hot gases from the smelters. As the hot liquor passes forward through the furnaces it loses moisture so that on reaching the smelters it is completely dry and is in a molten state. At this point (in the smelter) high pressure air jets are directed into this mass of material, causing the rapid oxidation of the resins, pitch, and other organic constituents. As this oxidation takes place, NaOH is converted to $Na_2CO_3$ and all $Na_2SO_4$ to $Na_2S$. The hot gases which result from this oxidation are led over the incoming partially dried digester liquor, through refuse heat boilers and thence to the stacks. The contents of the gases which go into the stacks are taken up in detail at a later time as they constitute the major source of unpleasant odors produced by the plant.

The molten residue (largely $Na_2CO_3$ and $Na_2S$) is dropped into cold water or dilute digester liquor, is filtered, and then treated with quicklime (CaO). It is this hot liquor containing $Na_2S$ and $Na_2CO_3$ which gives off some hydrogen sulphide ($H_2S$) gas. After treatment with CaO, the $CaCO_3$ formed is settled out in Dorr separators. The caustic liquid (containing NaOH and $Na_2S$) is pumped to the digesters and reused. The precipitated $CaCO_3$ is burned with the bark removed from the logs, thus reforming CaO.

### Sources of Nuisance Odors

There are three types of obnoxious odors due to processes being carried on in this plant, namely: (1) hydrogen sulphide; (2) volatile organic sulphur compounds; and (3) chemical smoke containing sodium sulphate, sodium sulphide, traces of $H_2S$, and quantities of carbon and organic materials. The sources and origin of each of these three types of odors are as follows:

Hydrogen sulphide is formed and released to the atmosphere—(1) at the smelter furnaces where molten $Na_2CO_3$ and $Na_2S$ are dropped into water; and (2) in the separator building where this solution is filtered.

The treatment of the fresh wood chips by the digester liquor containing $Na_2S$ brings about the formation of many unknown volatile organic sulphur compounds. At nearly all points of the process at which the pulp is handled after the digestion, certain of these ill-smelling volatile organic compounds are liberated. The greatest volume and concentration of these compounds are released (1) from the turpentine condenser as steam is bled from the digester tanks, and (2) when the pulp is blown from the

TABLE I.—Concentrations and characteristics of various substances in air which are readily perceptible*

| Substance | Formula | Concentrations causing faint odor (mg/liter) (oz/1000 cu.ft.) | Remarks |
|---|---|---|---|
| Acrolein | $CH_2{:}CH.CHO$ | 0.038 | Acrid odor of burning fat. |
| Allyl amine | $CH_2{:}CH.CH_2.NH_2$ | 0.067 | Odor similar to ammonia. Irritating. |
| Allyl disulphide | $(CH_2{:}CHCH_2)_2S_2$ | 0.0001 | Garlic odor. Decomposes. |
| Allyl sulphide | $(CH_2{:}CH.CH_2)_2S$ | 0.00005 | Garlic odor. |
| Benzaldehyde | $C_6H_5.CH{:}O$ | 0.003 | Odor of bitter almonds. |
| Butylene (beta) | $CH_3.CH{:}CH.CH_3$ | 0.059 | Gas-house odor. |
| Carbon disulfide | $CS_2$ | 0.0026 | Aromatic odor, slightly pungent. |
| Chlorine | $Cl_2$ | 0.010 | Pungent and irritating odor. |
| Coumarine | $C_6H_4CH{:}CH.CO.O$ | 0.00034 | Vanilla odor. Pleasant. |
| Diphenyl ether | $(C_6H_5)_2O$ | 0.000069 | Geranium odor. Pleasant. |
| Ethyl mercaptan | $CH_3CH_2.SH$ | 0.00019** | Odor of decayed cabbage. |
| Hydrogen sulfide | $H_2S$ | 0.0011 | Odor of rotten eggs. Nauseating. |
| Methyl sulfide | $(CH_3)_2S$ | 0.0011 | Odor of decayed vegetables. |
| Propyl mercaptan | $C_3H_7SH$ | 0.000075 | Unpleasant odor. |
| Skatole | $C_9H_9N$ | 0.0012 | Fecal odor. Nauseating. |
| Sulfur dioxide | $SO_2$ | 0.009 | Pungent, irritating odor. |
| Thiocresol | $CH_3.C_6H_4.SH$ | 0.0001 | Rancid, skunk-like odor. |

* Based on data from (Prentiss) (Fieldner et al.)
** Average value of observations obtained with material of varying purity.

digesters with the release of large quantities of steam containing many volatile constituents.

The large quantities of smoke which are released through exhaust stacks are generated as the result of the rapid oxidation in the smelters of the resins, pitch, and organic materials present in the evaporated digester liquors. The high pressure air jets which cause this oxidation also cause the atomization of the molten sludge. This process releases large amounts of $Na_2SO_4$ in colloidal state; so that this finely divided material is carried by the wet gases through the waste heat boiler and out the exhaust stacks. Although $Na_2SO_4$ in a pure state is odorless, there accompany these particles much uncarbonized organic matter, traces of $H_2S$, and various volatile oils of unknown composition. These organic materials which are at least partially adsorbed on the colloidal particles of $Na_2SO_4$, give rise to the peculiar odor noted when this smoke is blown across the ground.

### Methods and Results

In the determination of the concentration of hydrogen sulphide ($H_2S$), a standard M. S. A. hydrogen sulphide detector was used. No estimation can be made as to the absolute quantity of $H_2S$ which is released, since the gas is formed when molten $Na_2S$ is dropped into cold water. Varying amounts of the $H_2S$ are formed with large quantities of steam. The concentration of $H_2S$ at the points of origin is usually less than 0.001 per cent by volume as measured by the M. S. A. $H_2S$-detector. As a source of obnoxious odors contributing to the conditions outside the plant area, the formation of $H_2S$ at those points may be disregarded. Even over the vats where the $H_2S$ is of greatest concentration the odor is but little above the threshold value.

In collecting the material which causes the marked and ill-smelling odor at and near the turpentine condenser, it was necessary to freeze out the volatile constituents of the gases issuing from the turpentine condenser vents. The vapors which issue from this vent are composed largely of steam with small amounts of volatile organic sulphur compounds. The gases were drawn from the vent stack through a calcium chloride tube, thence through a condenser tube which was cooled by $CO_2$ snow. As the vapors passed through the $CaCl_2$ tube the water vapor was removed. The organic constituents were condensed in the cooled tube. No worthwhile estimation can be made as to the quantity of volatile organic materials which are released at the condenser vent or at the point of release of vapors from the digester blow-off. These vapors, largely steam, are blown off intermittently and it is doubtful whether any estimate of the total volume would be possible. Likewise, at each stage of the process, including the paper making, there are released moderate quantities of these volatile materials.

In order to obtain samples of the stack gases, a one-liter wide-mouth bottle was fitted with a two-hole rubber stopper. In this stopper were attached glass tubes. By attaching one of the tubes to a water suction pump and drawing the stack gases through this bottle, flushing out all residual air, a sample of the stack gases was obtained. Qualitative tests show that the stack gases contain small amounts of free $H_2S$ and are slightly acid in reaction. The air-dried solid material from the stacks when dissolved in distilled water gave a neutral reaction (to litmus).

The solids of the stack gases for chemical analysis were sampled as follows: A special gas-sampling tube filled with absorbent cotton was introduced into the bottom of the stack, and the gases were drawn through this tube by means of a water suction pump. The solid material which was collected in this manner was analyzed for the more important constituents on returning to the laboratory.

Analysis of the air-dried solid material which passes into stacks under normal operating conditions shows:

| | |
|---|---|
| Moisture | 7.8 per cent |
| $Na_2SO_4$ | 75.1 |
| $Na_2S$ | Trace |
| Water soluble organic matter | 9.8 |
| Ether soluble organic matter | 1.8 |
| Free carbon | 5.5 |

It is estimated by the management that at a normal production rate of 300 tons of finished paper per twenty-four hours, there will be lost through the exhaust stack of the smelter a total quantity of 18,000 pounds of $Na_2SO_4$ per twenty-four-hour day.

The concentration of total solids of the stack gases as they issue from the stacks may be estimated since the total rate of induced draft of the stack has been given to us as 88,000 cu. ft. per minute. Therefore, the estimate of total solids in the gases as they pass from the stack is 0.003 ounces per cubic foot (3 mg/l).

In addition to the solids previously mentioned there is a great amount of moisture, some traces of $H_2S$, and rather large quantities of volatile organic matter. Since by an analysis of the solids contained in the stack gases it has been shown that seventy-five per cent of the solid constituents of these gases is $Na_2SO_4$, it is estimated that about twelve tons of solid material per twenty-four hours will pass from the exhaust stacks.

It is the volatile organic matter not shown by the above analysis, the volatile organic matter that is adsorbed on the particles of $Na_2SO_4$, and the solid organic constituents of the stack gases which largely produce the odor of this smoke. It must be remembered that only very minute amounts of materials are required to produce marked odors, as, for instance, but one to two parts per million of ethyl mercaptan produces a marked and unpleasant odor (concentration 0.005 mg/l).

### Discussion

Although the odor of the mixture of the various volatile organic sulphur compounds as released in normal operation is very ill smelling (like rotten cabbage), it seems from our observations that this odor is not the major factor in producing the unpleasant conditions in areas away from the plant. However, by controlling the release of these organic vapors where possible and at those points where greater quantities are released, there will undoubtedly be a lessening of the obnoxious conditions. It seems probable that the major sources of this odor might be controlled by causing the vapors from the turpentine condensers and the exhaust steam from the digester blow-offs to be led into a tall stack, or preferably under a boiler (thereby being burned). Some objections have been raised to this suggestion due to the possibility of fire or explosions brought about by flash-backs to the turpentine condensor. The use of

fine mesh screens might obviate this danger. Suggestions for combining the gases from the turpentine condenser with the smoke from the smelters, and precipitating by means of an electrical precipitator are discussed later in this paper.

### Individuals Misled

Heretofore, many individuals have been misled by statements that the odors of this type of plant were entirely due to mercaptans. This misunderstanding may be caused by some persons classing all organic sulphur compounds as mercaptans. Work done in this and other laboratories has shown that the crude turpentine which is steam distilled from the digesters contains 1 to 3 per cent dimethyl sulphide, small amounts of ethyl mercaptan, and many other unknown sulphur compounds. The markedly unpleasant odor which is noted at many points in the plant area is due to steam distillation and subsequent release of these volatile organic sulphur compounds.

### Suggested Steps

The following steps are suggested as a working basis in the study of methods for control and removal of sources of odors in kraft as well as other pulp and paper mills. Modifications of these procedures may well be applied to the study of control of odors generated at many industrial establishments:

1. Insofar as practical, all vapors and gases from the turpentine condenser should be passed into stacks or, preferably, passed under boiler fires so that they will be completely oxidized.
2. The turpentine condenser should be housed in a building having forced draft ventilation such that the vapors will be combined with the vapors of the condenser vents (as shown in suggestion 1).
3. The steam and vapors arising from the pulp digesters, when pulp is transferred to settling tanks, should be trapped and condensed, and the condensate handled in the same manner as the vapors from the turpentine condenser and vents.
4. A survey should be made of the air currents prevailing at a height of 200 to 500 feet, with an estimation of the influence of these currents, as well as the influence of topography of the surrounding countryside. The above factors should be studied before beginning the construction of any tall stack as the high density and relatively low temperature of chemical smoke will make adequate dispersion difficult.
5. A critical study should be made of the possibility of the use of a large electrical precipitator designed so that continuous operation of the plant will be possible; this precipitator to be designed so that electrodes and fittings will withstand the corrosive action of wet gases containing large amounts of inorganic and organic sulphur compounds. Units of this type have been used in similar plants *(2, 4)* (Sultzer and Beaver), and may well effect a major economy of operation, since large amounts of $Na_2SO_4$ would be recovered and again passed through the smelter to form NaOH and $Na_2S$. Because of the colloidal character of the solids contained in the smoke, their adsorption capacity could be utilized by mixing the organic sulphur vapors from the turpentine condenser with the smoke before it enters the electrical precipitators. This procedure might cause the precipitated particles of $Na_2SO_4$ and carbon to carry down with them a large part of the organic sulphur compounds.

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(3) Prentiss, A. M.: Chemicals in War. McGraw-Hill Book Company, New York, 1937.
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# Stainless Steel for Pulp and Paper Mill Equipment*

By J. H. Faunce[1]

### Abstract

*There is a need for a wider knowledge of what grade of stainless steel should be used for specific applications. An 18-8 stainless steel proves to be a good material for jordan bars for liner stock in a board mill. A listing of grade suggestions for a few applications is given.*

### A Stainless Steel Grade for a Purpose

There is nothing new about the application of the stainless steels for pulp and paper mill equipment. It has been put to many equipment uses for both acid and alkaline pulping service as well as in the machinery used in pulp preparation and paper making.

We want to call to your attention the fact that there is a wide variety of grades of stainless steel both from the point of view of analysis as well as price. Some of these are much better suited for certain applications than others, and make possible improvements in production technique not obtainable with other commonly used materials.

Our experience shows that, although stainless steel is being used for a large number of applications, there are many cases where the economic feasibility of using a particular grade over some other one is not known and in certain cases the grade now being used may not be the best for the job. There is room for much work of this nature in practically all but the sulphite pulping field. This point has been discussed

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[1] Industrial Markets Department, Development Division, American Rolling Mill Company, Middletown, Ohio.

elsewhere *(1)* so that we will not go into it other than to state an example that we have found in our work in the field with paper mills that demonstrates this point and might possibly offer grade suggestions for your use.

### An 18-8 Stainless Steel for Jordan Bars

The application that we will discuss is jordan bars. The particular machine in which these bars have been and are being tested is used for the shredding of liner stock for a board mill. Prior to the use of these stainless bars, a heat treated steel bar had been used with an average total service life of approximately four months.

Bars made from 18-8 stainless steel, with an analysis of 17.50-19.00 per cent chromium, 8 to 9 per cent nickel, .08-.12 per cent carbon, were installed in the plugs. In the shell, bars made of heat treated stainless steel that is often used for this application were placed.

This machine ran continuously for four and a half months when it suddenly broke down. On taking it apart it was found that the shell bars were broken up and had to be discarded, while the bars in the plug were suitable for further use after straightening. They had been badly bent by the broken pieces of the shell bars but were practically as good as new after straightening.

The original plug bars were placed back in service with new shell bars and on December 5, 1938 were still running satisfactorily. These bars were recently inspected at the end of a total service life of ten months and were found to be practically as good as the day of original installation.

The average installed cost to the particular paper mill in which these tests are being run has been $96.00 for each plug with the heat treated steel bars and $140.00 for each shell. With stainless steel either in the 18-8 analysis or the commonly used stainless grade the cost is approximately $200.00 for the plug and $369.00 for the shell.

This means that the heat treated steel plug has cost $.80 per day. The ordinarily used heat treated stainless has cost $1.48 per day. The 18-8 stainless bars have so far cost $.0.66 per day and this cost is even now decreasing daily. The mill engineer running these tests reports that he is unable to even venture a guess as to the ultimate service that he will get from these 18-8 bars.

On this same basis the daily cost for shell fillings would be $1.17 for heat treated steel, $2.73 for the heat treated stainless steel, and $1.23 for the 18-8.

It should be borne in mind that these figures are based merely on the operating life until December 5, 1938 for the 18-8 and not on the total service life, as the 18-8 bars are still in excellent condition. The figures on the other bars represent the total service life in this particular test. The costs are those quoted by equipment fabricators to this mill as obtained from the plant in question.

Now, these figures include only installation costs to the mill and not the total costs including operation and maintenance. There are other costs involved in the operation of jordans such as chipping out the wood from between the bars. In the same mill in which these tests are being run it has been necessary for them to chip twice for each service life of heat treated steel bars during their four months average service time. To take down, chip, and set up a jordan in this mill, it takes four mechanics a day at time and a half pay to do this work. This has not been necessary with the 18-8 bars and they have not been chipped in their entire ten months of operation. This saving further lowers operating costs per day with this type of stainless steel.

### Different Grades Have Different Properties

It is true that this is only one test which to date is not complete and has been run under one service condition which does not apply to all jordan installations. However, it does demonstrate that all stainless types do not perform the same under identical service conditions and also that by proper type selection they give you more for your money than low first cost materials.

### Grade Suggestions for Specific Applications

In previous discussion the various stainless analyses and the general corrosion resisting data pertaining to them have been given, *(2)* so that we will not touch on them here. We will, however, list a few stainless steel grade suggestions for some specific equipment applications based on our experience in the field to date.

SULPHATE PULPING EQUIPMENT

| Application | Stainless Grade Per Cent Composition |
|---|---|
| Digester cone linings | 13 Cr. |
| Diffuser bottoms and perforated plates | 18 Cr.—8 Ni. |
| Pulp washers and screens | 18 Cr.—8 Ni. |
| Knot catchers and lead in pipes | 18 Cr.—8 Ni. |
| Plate screens | 18 Cr.—8 Ni. |
| Bleaching equipment and washers | 18 Cr.—12 Ni.—2-4 Mo. |
| Evaporator lining in top and upper half of shell, tube sheets, tubes, etc. | 18 Cr.—8 Ni. |
| Smelter spouts | 25 Cr.—12 Ni. |
| Causticizer bottoms | 13 Cr. |
| Filters | 13 Cr. |
| Bucket conveyor from calcining furnace | 13 Cr. |
| Fatty acid equipment | 18 Cr.—12 Ni.—2-4 Mo. |

SULPHITE PULPING EQUIPMENT

| Application | Stainless Grade Per Cent Composition |
|---|---|
| Digester linings | 18 Cr.—12 Ni.—2-4 Mo. |
| Blow pit linings and target plates | 18 Cr.—12 Ni.—2-4 Mo. |
| Bleaching equipment and washers | 18 Cr.—12 Ni.—2-4 Mo. |
| Acid towers and accumulators | 18 Cr.—12 Ni.—2-4 Mo. |

PAPER MAKING EQUIPMENT

| Application | Stainless Grade Per Cent Composition |
|---|---|
| Beaters for fine paper | 18 Cr.—8 Ni. |
| Jordan bars | 18 Cr.—8 Ni. |
| Bleaching equipment and washers | 18 Cr.—8 Ni. |
| Screen plates | 18 Cr.—8 Ni. |
| Paper machine vats | 18 Cr.—8 Ni. or 13 Cr. |
| Save-alls | 18 Cr.—8 Ni. or 13 Cr. |
| Distributing boxes | 18 Cr.—8 Ni. or 13 Cr. |
| Flumes | 18 Cr.—8 Ni. or 13 Cr. |
| Piping | 18 Cr.—8 Ni. |
| Head boxes | 18 Cr.—8 Ni. or 13 Cr. |
| Suction boxes and covers | 18 Cr.—8 Ni. |

### Consult With Metals Producers

The above are general suggestions which may not apply for the equipment mentioned in all cases. We would suggest that mill engineers and equipment fabricators consult with their metal suppliers prior to each application. The jordan bar example shows how cooperative work between the metals manufacturers, equipment builders, and mill engineers can possibly lead to more satisfactory and money saving equipment. It also may help to indicate the advisability of using certain grades of *stainless* for the application in question.

### Literature Cited

(1) *Paper Trade J.* 106, No. 15: 57-59 (April 14, 1938); *Tech. Assoc. Papers*, 21: 261-263 (June, 1938).
(2) Paper Mill and Wood Pulp News (Dec. 5, 1936).

# Imports of Paper and Paper Stock

**Giving Manifests of New York, Boston, Philadelphia and Other Ports of Newsprint, Wrapping, Writing, Coated, Blotting, Tissue, Strawboard, Wallboard, Cigarette Papers, Sulphite, Kraft and Ground Wood Pulp.**

## NEW YORK IMPORTS

WEEK ENDING JUNE 10, 1939

SUMMARY

Cigarette paper....757 cs.
Wall paper....7 bls., 23 cs.
Paper hangings....3 bls., 1 cs.
Newsprint....12,720 rolls.
Printing paper....52 bls., 104 rolls, 22 cs.
Wrapping paper....27 rolls.
Drawing paper....12 cs.
Filter paper....19 cs.
Surface coated paper....13 cs.
Photo paper....20 cs.
Decalcomanias....11 cs.
Decalcomania paper....22 cs.
Transfer paper....26 cs.
Writing paper....5 cs.
Tissue paper....7 cs.
Paper tubes....117 cs.
Miscellaneous paper....1 crate, 19 bls., 2144 rolls, 17 cs.

### CIGARETTE PAPER

Champagne Paper Corp., *Indiana,* Havre, 507 cs.
Irving Trust Co., *Georgic,* London, 13 cs.
Champagne Paper Corp., *Ile de France,* Havre, 150 cs.
Braunstein Freres, Inc., *Washington,* Havre, 87 cs.

### WALL PAPER

Taub Hummell & Schnall, *Pr. Harding,* Havre, 1 cs.
Pitt & Scott Corp., *Pr. Harding,* Havre, 7 bls., 1 cs.
——, *American Farmer,* London, 1 cs.
Products from Sweden, *Stavangerfjord,* Gothenburg, 7 ctns.
Gondrand Shipping Co., *Washington,* Havre, 10 cs.
——, *Columbus,* Bremen, 3 cs.

### PAPER HANGINGS

W. H. S. Lloyd & Co., *American Merchant,* London, 3 bls., 1 cs.

### NEWSPRINT

Parsons & Whittemore, Inc., *Schodack,* Havre, 79 rolls.
Jay Madden Corp., *New York,* Finland, 374 rolls.
——, *Stavangerfjord,* Oslo, 184 rolls.
H. G. Craig Co., *Donpaco,* Donnacona, 349 rolls.
Jay Madden Corp., *Temnaren,* Kotka, 170 rolls.
News Syndicate Co., Inc., *Brand,* Comeau Bay, 7,575 rolls.
N. Y. Evening Journal, *Markland,* Liverpool, N.S., 638 rolls.
N. Y. Tribune, *Markland,* Liverpool, N.S., 1,427 rolls.
World Telegram, *Markland,* Liverpool, N.S., 596 rolls.
Brooklyn Daily Eagle, *Markland,* Liverpool, N.S., 616 rolls.
Herald Statesman, Inc., *Markland,* Liverpool, N.S., 42 rolls.
H. G. Craig Co., *Kermic,* Donnacona, 345 rolls.
H. G. Craig Co., *A.C.D.,* Donnacona, 325 rolls.

### PRINTING PAPER

Jay Madden Corp., *Pr. Harding,* Finland, 40 bls., 101 rolls.
Japan Paper Co., *Pr. Harding,* Havre, 8 cs.
Lafayette Co., Ltd., *American Merchant,* London, 3 cs.
Oxford University Press, *Laconia,* Liverpool, 11 cs.
R. Wilson Paper Corp., *Zaandam,* Rotterdam, 12 bls., 3 rolls.

### WRAPPING PAPER

Blauvelt Wiley Paper Manfg. Co., *Temnaren,* Gothenburg, 27 rolls.

### DRAWING PAPER

Devoe & Raynolds Co., *American Merchant,* London, 4 cs.
H. Reeve Angel & Co., Inc., *American Merchant,* London, 5 cs.
Keuffel & Esser Co., *American Farmer,* London, 1 cs.
Titan Shipping Co., *Columbus,* Bremen, 2 cs.

### FILTER PAPER

H. Reeve Angel & Co., Inc., *American Merchant,* London, 12 cs.
H. Reeve Angel & Co., Inc., *Georgic,* London, 7 cs.

### SURFACE COATED PAPER

C. Happel, *Washington,* Hamburg, 13 cs.

### PHOTO PAPER

Agfa Ansco Corp., *American Farmer,* London, 10 cs.
——, *American Farmer,* London, 1 cs.
J. J. Gavin Co., *Washington,* Southampton, 9 cs.

### DECALCOMANIAS

Sellers Transportation Co., *New York,* Hamburg, 6 cs.
L. Sonneborn Sons, Inc., *Zaandam,* Rotterdam, 1 cs.
Sellers Transportation Co., *Columbus,* Bremen, 4 cs.

### DECALCOMANIA PAPER

B. F. Drakenfeld & Co., *Laconia,* Liverpool, 22 cs. (duplex).

### TRANSFER PAPER

J. H. & G. B. Siebold, Inc., *Pr. Harding,* Hamburg, 26 cs.

### WRITING PAPER

Japan Paper Co., *American Merchant,* London, 1 cs.
H. W. Robinson Co., *American Merchant,* London, 1 cs.
Van Oppen & Co., *American Farmer,* London, 2 cs.
Marshall Field Co., *Washington,* Havre, 1 cs.

### TISSUE PAPER

Van Oppen & Co., *Pr. Adams,* Genoa, 7 cs.

### PAPER TUBES

——, *New York,* Hamburg, 44 cs.
——, *Columbus,* Bremen, 73 cs.

### MISCELLANEOUS PAPER

Keuffel & Esser Co., *New York,* Hamburg, 13 cs., 48 rolls, 1 crate.
Coty, Inc., *Ile de France,* Havre, 3 cs.
Bruno Lederer, *Washington,* Havre, 1 cs.
Metropolitan Paper & Bag Corp., *Temnaren,* Gothenburg, 19 bls., 640 rolls.
Consolidated Paper Co., Inc., *Temnaren,* Gothenburg, 1,107 rolls.
Gilson Bros., Inc., *Temnaren,* Gothenburg, 349 rolls.

### RAGS, BAGGINGS, ETC.

Atlantic By Products, *Schodack,* Havre, 16 bls. rags.
Seggerman Nixon Co., *Schodack,* Havre, 3 bls. rags.
Chase National Bank, *Schodack,* Havre, 120 bls. rags.
——, *Schodack,* Havre, 2 bls. rags.
E. J. Keller Co., Inc., *Schodack,* ——, 9 bls. rags.
——, *Ragnhild,* Antwerp, 24 bls. bagging.
Darmstadt Scott & Courtney, *Gudrun Maersk,* Casablanca, 366 bls. rags.
——, *Gudrun Maersk,* Alexandria, 145 bls. rags.
W. Steck & Co., *Exochorda,* Alexandria, 203 bls. bagging.
D. Benedetto, Inc., *Exochorda,* Alexandria, 171 bls. rags.
Irving Trust Co., *Exochorda,* Alexandria, 112 bls. bagging, 40 bls. old cottons.
R. Blank, *Exochorda,* Alexandria, 143 bls. rags.
E. J. Keller Co., Inc., *Excello,* ——, 313 bls. rags.
Irving Trust Co., *Pr. Adams,* Bombay, 300 bls. cotton waste.

### BONE GLUE, ETC.

Pioneer Import Corp., *New York,* Hamburg, 40 bags bone glue sheets.
——, *Vulcania,* Trieste, 100 bags hide glue, 30 bags hide glue sheets.

OLD ROPE

———, *American Merchant,* London, 82 coils.
National City Bank, *American Farmer,* London, 46 coils.
Chase National Bank, *American Farmer,* London, 66 coils.
National City Bank, *Montreal City,* Bristol, 71 coils.
Chase National Bank, *Montreal City,* Bristol, 107 coils.
E. J. Keller Co., Inc., *N. Amsterdam,* ———, 69 coils.

CHINA CLAY

Orbis Products Corp., *Zaandam,* Rotterdam, 140 bags.
Orbis Products Corp., *N. Amsterdam,* Rotterdam, 140 bags.

CASEIN

National City Bank, *Ile de France,* Havre, 267 bags.
National City Bank, *Eastern Prince,* Buenos Ayres, 417 bags.

WOOD PULP

Gottesman & Co., Inc., *Temnaren,* Gothenburg, 160 bls. sulphite.
Gottesman & Co., Inc., *Carolina Thorden,* Sweden, 600 bls. wood pulp.
Gottesman & Co., Inc., *Belos,* Sweden, 9000 bls. wood pulp.
Chase National Bank, *Stavangerfjord,* Oslo, 300 bls. bleached sulphite.
Price & Pierce, Ltd., *Stavangerfjord,* Oslo, 250 bls. bleached sulphite.
E. M. Sergeant Pulp & Chemical Co., *Stavangerfjord,* Oslo, 150 bls. dry sulphite.
Smith & Nephew, Inc., *Stavangerfjord,* Oslo, 50 bls. dry sulphite.
The Borregaard Co., Inc., *Stavangerfjord,* Sarpsborg, 504 bls. unbleached sulphate.
———, *Hercog Jekabs,* Tallinn/Reval, 4,185 bls. sulphate, 701 tons.
D. M. Hicks, Inc., *Temnaren,* Gothenburg, 600 bls. dry sulphite.
Pulp Specialties, Inc., *Temnaren,* Gothenburg, 428 bls. sulphate.

WOOD PULP BOARDS

———, *Temnaren,* Viipuri, 392 rolls.

## ALBANY IMPORTS

WEEK ENDING JUNE 10, 1939

Price & Pierce, Ltd., *Kolsnaren,* ———, 600 bls. bleached sulphite.

## BOSTON IMPORTS

WEEK ENDING JUNE 10, 1939

———, *Schodack,* Havre, 4 cs. waterproof paper.
———, *Schodack,* Dunkirk, 26 bls. rags.
Price & Pierce, Ltd., *Mormacsun,* ———, 330 bls. bleached sulphite.

## PHILADELPHIA IMPORTS

WEEK ENDING JUNE 10, 1939

Gottesman & Co., Inc., *Temnaren,* Stockholm, 1,000 bls. dry sulphite.
Gottesman & Co., Inc., *Temnaren,* Gothenburg, 127 bls. sulphite, 999 bls. sulphate.
Castle & Overton, Inc., *Schodack,* Havre, 130 bls. rags.
Loumar Textile By Products, *Schodack,* Havre, 98 bls. rags.
Loumar Textile By Products, *Schodack,* Dunkirk, 69 bls. bagging.
Beck Engraving Co., *Zaandam,* Rotterdam, 7 bls. printing paper.
Castle & Overton, Inc., *Temnaren,* Gothenburg, 299 bls. sulphite, 150 bls. mechanical pulp.
Atlas Paper Products Co., *Temnaren,* Gothenburg, 6 rolls kraft paper.
The Borregaard Co., Inc., *Temnaren,* Gothenburg, 42 rolls, 6 bls. paper.
Jay Madden Corp., *Temnaren,* Helsingfors, 166 rolls newsprint.
Pulp Sales Corp., *Temnaren,* Viipuri, 2,336 bls. sulphite, 2,675 bls. wood pulp.
Wilkinson Bros., & Co., Inc., *Temnaren,* Kotka, 144 rolls newsprint.
J. W. Hampton Jr., & Co., *Temnaren,* Kotka, 29 bls. printing paper, 265 rolls newsprint.

## WILMINGTON IMPORTS

WEEK ENDING JUNE 10, 1939

Bulkley Dunton Pulp Co., Inc., *Temnaren,* ———, 420 bls dry sulphite.
Pulp Sales Corp., *Temnaren,* Viipuri, 5,850 bls. sulphite.
Jay Madden Corp., *Temnaren,* Kotka, 129 rolls newsprint.

## BALTIMORE IMPORTS

WEEK ENDING JUNE 10, 1939

Congoleum Nairn Co., *Schodack,* Havre, 1,463 bls. rags.
American Express Co., *Schodack,* Havre, 1 cs. writing paper.
Parsons & Whittemore, Inc., *Schodack,* Havre, 112 rolls newsprint.
———, *Hercog Jekabs,* Tallinn/Reval, 950 bls. sulphate.
Bulkley Dunton Pulp Co., Inc., *Temnaren,* ———, 510 bls. dry sulphite.
Perkins Goodwin & Co., *Temnaren,* Gothenburg, 387 bls. sulphate.
M. Sone, *Temnaren,* Gothenburg, 530 bls. wood pulp.
Pulp Sales Corp., *Temnaren,* Viipuri, 188 bls. wood pulp.
Pulp Sales Corp., *Temnaren,* Kotka, 350 bls. bleached sulphite.
Jay Madden Corp., *Temnaren,* Kotka, 1,432 rolls newsprint.
———, *Markland,* Liverpool, N.S., 2,036 rolls newsprint.
Price & Pierce, Ltd., *Kexholm,* ———, 510 bls. unbleached sulphate.

## NORFOLK IMPORTS

WEEK ENDING JUNE 10, 1939

Gottesman & Co., Inc., *Belos,* Sweden, 5,700 bls. wood pulp.

## NEWPORT NEWS IMPORTS

WEEK ENDING JUNE 10, 1939

De Mauduit Paper Corp., *Schodack,* Havre, 743 cs. cigarette paper.

## NEW ORLEANS IMPORTS

WEEK ENDING JUNE 10, 1939

M. Sone, *West Hobomac,* Hamburg, 620 bls. wood pulp.

## HOUSTON IMPORTS

WEEK ENDING JUNE 10, 1939

Pagel Horton & Co., Inc., *Uddeholm,* Sweden, 409 rolls newsprint.

## CHICAGO IMPORTS

WEEK ENDING JUNE 10, 1939

M Sone, *Betta,* Sundsvall, 3,000 bls. wood pulp.

## MONTREAL IMPORTS

WEEK ENDING JUNE 10, 1939

Gottesman & Co., Inc., *Stureholm,* Sweden, 15,985 bls. woodpulp.
Pagel Horton & Co., Inc., *Stureholm,* Sweden, 2,000 bls. wood pulp.
Pagel Horton & Co., Inc., *Lundby,* Sweden, 26,003 bls. wood pulp.
M. Sone, *Stureholm,* Gothenburg, 860 bls. wood pulp.

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## Kieckhefer Comments on Strike

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., June 12, 1939—The strike-bound Kieckhefer Container Company announced today it is willing to resume operations as soon as its "employes make such a move possible." This announcement was made in a letter sent to J. Norman Ludwick, Pennsauken township committee chairman, in answer to a telegram he sent offering his services to assist in a settlement of the month-old labor disturbance.

Mr. Ludwick said he held a conference with representatives of the three labor organizations involved, and he is expecting an answer from those sources momentarily.

The striking unions are International Brotherhood of Pulp, Sulphite and Paper Mill Workers together with International Brotherhood of Firemen and Oilers, Local No. 126, and the International Brotherhood of Teamsters, Chauffeurs, Stablemen and Helpers, Local No. 626.

# New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, June 14, 1939.

Sales volume in many grades of paper and paper board is well maintained at a good level, according to reports from many manufacturers' representatives, jobbers, and general paper merchants for the current week. General industrial and trade activity during May held up well despite strikes in the coal and automobile industries. The volume of trade for May was approximately 7 per cent higher than for the like month last year, with business reported very good along the Atlantic Seaboard, and in the Southeastern States. Trade in the New York area was generally reported as good.

The index of general business activity for the week ended June 3, due to the Memorial Day holidays, declined to 86.0 per cent, from 87.6 per cent in the preceding week, and compared with 75.0 per cent for the corresponding period last year. The trend of the index was downward in the first two weeks of last May and upward from May 15 to May 29. Production of 200 paper mills for the week ended June 3 declined to an estimated 70.9 per cent, from 79.6 per cent for the like period last year, and with 85.3 per cent in 1937. Paper board production for the week ended June 3 was 57.0 per cent, compared with 66.0 per cent for the previous week, with 48.0 per cent, for the like period in 1938, and with 76.0 per cent in 1937.

The newsprint situation continues practically unchanged, with no important changes reported this week in demand or prices. According to the latest report, stocks of newsprint in domestic mills totaled 21,424 tons at the end of last month, with 187,880 tons in Canadian mills, giving a total of 209,374 tons, compared with 232,565 tons at the end of April 1938.

Orders in the local market are reported at a good level in many grades of paper this week. As a whole, the wholesale paper market is firm. Demand for a few grades of book paper is reported in some quarters of the trade as a little better this week, although as a whole there is little change, and sales volume continues to lag behind trade expectations. Some grades of sulphite papers are reported as being ordered in larger quantities, with the most activity indicated in sulphite bonds in the medium and lower price grades. Sales of many grades of ground wood papers is well maintained, with orders in some grades reported as good.

The kraft paper market continues active, and while volume at this date is below that of the first of the month, this is a common occurrence in this branch of the industry. Prices remain fairly firm and while competition is keen, conditions are as satisfactory as can reasonably be expected. The imports of kraft paper are now held as of not particular important, as the bulk of foreign kraft paper is of the M.G. grade and while marketed below the representative quoted market prices for the domestic product, this competition is not likely to have an important effect on the market unless the tonnage is considerably increased above the quantity now imported.

Production and sales of many grades of paper board is at a good level and the market situation is generally viewed as satisfactory in the trade.

Prices on all grades of paper and paper board are relatively firm and no important changes from prevailing quotations have been reported this week.

### Mechanical Pulp

Demand continues good in mechanical pulp with no important change reported in the market situation this week. According to the latest report production for the first quarter of this year totaled 267,053 tons, compared with 239,775 tons for the first quarter of last year. Consumption for the first quarter of this year was 248,249 tons, compared with 219,521 tons last year. Shipments for the first quarter totaled 6,292 tons, compared with 5,550 tons for the like period last year. Stocks on hand at the end of April of this year totaled 46,730 tons, compared with 53,447 tons for the like period last year. Imports for the first quarter of this year totaled 54,581 tons, compared with 50,391 tons for the like period last year.

### Chemical Pulp

With ample stocks on hand and consumption at a good level, no important change in demand or prices has been reported in any grade of chemical pulp this week. Production of bleached sulphite for the first quarter of this year totaled 261,625 tons, compared with 251,508 tons for the like period last year. Consumption for the first quarter of this year totaled 167,318 tons, compared with 143,229 tons last year. Stocks on hand at the end of April of this year totaled 50,383 tons, compared with 82,484 tons for the like period last year. Imports of bleached sulphite for the first quarter of this year totaled 290,598 tons, compared with 264,595 tons for the like period last year.

### Old Rope and Bagging

The old rope market is reported quiet and no important change in demand or prices has been reported this week. Trading in old bagging is decidedly slow and this market is reported as weak. The price trend is apparently downward but no important change from prevailing quotations has been reported to date.

### Rags

The domestic rag market is reported as quiet. Mill buying in small lots for immediate requirements prevails. Prices hold unchanged, with export demand light.

# Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, June 14, 1939.

BLANC FIXE—Prices on blanc fixe continue firm and unchanged at prevailing market levels. The pulp is currently quoted at from $42.50 to $45 per ton, in bulk; the powder is offered at from 3½ to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER—Quotations on bleaching powder remain firm and conform to prevailing market prices. Bleaching powder is currently quoted at from $2 to $2.25 per 100 pounds, in drums, at works.

CASEIN—The demand for casein continues good. Prices remain unchanged. Standard domestic casein, 20-30 mesh, is currently quoted at from 8½ to 9 cents per pound; 80-100 mesh, at from 9 to 9½ cents per pound; all prices in bags, car lot quantities.

CAUSTIC SODA—Prices on caustic soda continue firm and unchanged at prevailing market quotations. Solid caustic soda is quoted at from $2.10 to $2.30 per 100 pounds; flake and ground at from $2.50 to $2.70 per 100 pounds, in drums, at works.

CHINA CLAY—Quotations on china clay continue firm and remain unchanged at prevailing market levels. Domestic filler clay is quoted at from $6.50 to $12 per ton; coating clay at from $11 to $22 per ton, at mines. Imported clay is offered at from $13 to $25 per ton, ship side.

CHLORINE—Prices on chlorine continue firm and conform to prevailing market quotations. Chlorine is currently quoted at $1.75 per 100 pounds, in single-unit tank cars, f.o.b., works.

ROSIN—The demand for rosin is reported good at this date and the market firm. Prices are a little higher. "G" gum rosin is quoted at $4.85; "FF" wood rosin at $4.45; per 280 pounds, gross weight, in barrels, at Savannah. Seventy per cent gum rosin size is offered at $2.70 per 100 pounds, f.o.b., shipping point.

SALT CAKE—Prices on salt cake continue firm and unchanged at prevailing market quotations. Prices range at from $12 to $13.50 per ton; chrome salt cake at from $11 to $12 per ton, f.o.b., shipping point. Imported salt cake is quoted at from $14.50 to $15 per ton, Gulf or Atlantic Seaboard, on dock.

SODA ASH—Quotations on soda ash continue firm and unchanged at prevailing market levels. Prices on soda ash in car lots, at works, per 100 pounds, are as follows: in bulk, $.90; in bags, $1.05; and in barrels, $1.35.

STARCH—The demand for corn starch is reported good and the market firm. Globe pearl is currently quoted at $2.55 per 100 pounds; special paper starch at $2.65 per 100 pounds. All prices in bags, car lot quantities, f.o.b., Chicago.

SULPHATE OF ALUMINA—Quotations on sulphate of alumina continue firm and unchanged at prevailing market levels. The commercial grades are offered at $1.15; iron free at $1.30 per 100 pounds, in bags, car lot quantities, f.o.b., works.

SULPHUR—Prices on sulphur continue firm and unchanged at prevailing market levels under a good steady demand. Annual contracts are quoted at $16 per long ton, f.o.b., mines. Spot and nearby car lots are offered at $19 per ton.

TALC—The demand for talc is reported as good for the current week. Quotations are firm and conform to prevailing market prices. Domestic talc is quoted at from $15 to $18 per ton, Eastern mines. Imported talc is quoted at from $20 to $40 per ton, on dock.

# Market Quotations

## Paper

(Delivered New York)

| | | | |
|---|---|---|---|
| **News, per ton—** | | | |
| Roll, contract | $50.00 | @ | — |
| Sheets | 58.00 | @ | — |
| **Kraft—per cwt.—Delivered Zone A** | | | |
| No. 1 Northern | $4.75 | @ | $5.25 |
| Superstandard | 4.12½ | @ | 4.62½ |
| Northern Standard Wrapping | 4.00 | @ | — |
| Standard Wrapping | 3.50 | @ | — |
| **Tissues— Per Ream— Carlots** | | | |
| White No. 1 | $0.82½ | @ | — |
| White No. 1 M. G. | .80 | @ | — |
| White No. 1½ | 67½ | @ | — |
| White No. 2 | 60 | @ | — |
| Anti-Tarnish M. G. | .65 | @ | — |
| Colored | .77½ | @ | — |
| Kraft | .65 | @ | — |
| Manila | .60 | @ | — |
| Unbl. Toilet, 1 M. | 2.65 | @ | — |
| Bleached Toilet | 3.40 | @ | — |
| **Paper Towels—Per Case** | | | |
| Unbleached, Jr. | $1.75 | @ | — |
| Bleached Jr. | 3.10 | @ | — |
| **Manila—per cwt.—C. l. f. a.** | | | |
| No. 1 Jute | 7.75 | @ | 9.75 |
| No. 1 Manila Wrapping, 35 lb. | 5.00 | @ | — |
| No. 2 Manila Wrapping, 35 lb. | 4.75 | @ | — |
| **Boards, per ton—** | | | |
| News | 30.00 | @ | 32.50 |
| Chip | 30.00 | @ | 32.50 |
| Sgl. Mla. Lt. Chip | 42.50 | @ | — |
| Jute Lined Chip | 42.50 | @ | 45.00 |
| White Pat. Coated | 55.00 | @ | 57.50 |
| Kraft Liners | 45.00 | @ | — |
| Binders Boards | 71.00 | @ | 77.00 |

The following are representative of distributors' resale prices:

**Rag Content Bonds and Ledgers—**
White, Assorted Items,
Delivered in Zone 1:

| | Bonds | Ledgers |
|---|---|---|
| 100% Rag Ext. No. 1. | $39.10@$46.00 | $40.25@$47.25 |
| 100% Rag | 31.05@ 36.50 | 32.20@ 37.75 |
| 85% Rag | ..... | 29.90@ 35.00 |
| 75% Rag | 23.60@ 27.75 | 24.75@ 29.00 |
| 65% Rag | ..... | 21.65@ 26.25 |
| 50% Rag | 17.55@ 21.50 | 18.70@ 22.75 |
| 25% Rag | 14.65@ 17.75 | 15.80@ 19.25 |

Colors at $1.00 cwt. extra.

**Sulphite Bonds and Ledgers—**
White, Assorted Items,
Delivered in Zone 1:

| | Bonds | Ledgers |
|---|---|---|
| No. 1 | $8.60@$10.50 | $9.75@$12.00 |
| No. 2 | 7.70@ 9.50 | 8.90@ 10.75 |
| No. 3 | 6.75@ 8.25 | 7.90@ 10.00 |
| No. 4 | 7.00@ 8.50 | 8.20@ 10.00 |

Colors $1.00 cwt. extra.

**Free Sheet Book Papers—**
White, Cased Paper,
Delivered in Zone 1:

| | |
|---|---|
| No. 1 Glossy Coated | $11.30@$12.75 |
| No. 2 Glossy Coated | 9.70@ 11.00 |
| No. 3 Glossy Coated | 8.60@ 10.00 |
| No. 4 Glossy Coated | 8.05@ 9.25 |
| No. 1 Antique (watermarked) | 8.05@ 9.25 |
| No. 2 Offset | 7.45@ 8.50 |
| A Grade E. F. | 7.20@ 8.25 |
| A Grade S. & S. C. | 7.45@ 8.50 |
| B Grade E. F. | 6.65@ 7.75 |
| B Grade S. & S. C. | 6.90@ 8.00 |
| C Grade E. F. | 6.40@ 7.50 |
| C Grade S. & S. C. | 6.65@ 7.75 |
| D Grade E. F. | 6.10@ 7.00 |
| D Grade S. & S. C. | 6.35@ 7.25 |

Ivory & India at $.50 cwt. extra.

## Mechanical Pulp

(On Dock, Atlantic Ports)

| | | | |
|---|---|---|---|
| **No. 1 Imported—** | | | |
| Moist | 25.00 | @ | 28.00 |
| Dry | 25.00 | @ | 28.00 |
| **(Delivered)** | | | |
| No. 1 Domestic and Canadian | 29.00 | @ | 31.00 |

## Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

| | | | |
|---|---|---|---|
| **Bleached Sulphite (Domestic and Foreign)—** | | | |
| Prime Bleached Sulphite | 2.25 | @ | 2.75 |
| **Prime Qualities—** | | | |
| Easy-Bleaching Sulphite | 1.90 | @ | 2.00 |
| Strong Unbleached Sulphite | 1.80 | @ | 1.95 |
| **(On Dock, Atlantic Ports)** | | | |
| Kraft Bleached | 2.50 | @ | 2.75 |
| Kraft Light & Strong | 1.60 | @ | 1.75 |
| Kraft No. 1 | 1.45 | @ | 1.60 |
| Kraft No. 2 | 1.35 | @ | 1.40 |
| **(F. o. b. Pulp Mill)** | | | |
| Kraft Domestic | 1.25 | @ | 1.75 |
| **(Delivered)** | | | |
| Soda Bleached | 2.55 | @ | — |

Add 60 cents per short ton, dock charges for Albany; $2.50 for Lake Ports East and $3.50 for Lake Ports West of Mackinac Straits.

## Domestic Rags

**New Rags**

(Prices to Mill f. o. b. N. Y.)

| | | | |
|---|---|---|---|
| **Shirt Cuttings—** | | | |
| New White, No. 1 | 6.75 | @ | 7.00 |
| Silesias No. 1 | 4.50 | @ | 4.75 |
| New Unbleached | 6.75 | @ | 7.00 |
| Blue Overall | 4.90 | @ | 5.00 |
| Fancy | 1.75 | @ | 2.00 |
| Washables | 1.50 | @ | 1.60 |
| Mixed Khaki Cuttings | 2.25 | @ | 2.50 |
| O. D. Khaki Cuttings | 3.25 | @ | 3.40 |

**Old Rags**

| | | | |
|---|---|---|---|
| **White, No. 1—** | | | |
| Repacked | 2.90 | @ | 3.15 |
| Miscellaneous | 2.10 | @ | 2.25 |
| **White, No. 2—** | | | |
| Repacked | 1.50 | @ | 1.60 |
| Miscellaneous | 1.25 | @ | 1.40 |
| **Thirds and Blues—** | | | |
| Repacked | 1.30 | @ | 1.40 |
| Miscellaneous | 1.15 | @ | 1.20 |
| **Roofing Rags—** | | | |
| No. 1 | 1.00 | @ | 1.10 |
| No. 2 | .75 | @ | .85 |
| No. 3 (bagging) | .55 | @ | .65 |
| No. 4 | .60 | @ | .65 |
| No. 5A | .60 | @ | .65 |

## Foreign Rags

**New Rags**

| | | | |
|---|---|---|---|
| New Dark Cuttings | 2.25 | @ | 2.40 |
| New Mixed Cuttings | 2.80 | @ | 2.90 |
| New Light Silesias | 5.50 | @ | 5.75 |
| Light Flannelettes | 5.50 | @ | 5.75 |
| New White Cuttings | 7.00 | @ | 7.50 |
| New Light Oxford | 4.00 | @ | 4.50 |
| New Light Prints | 3.00 | @ | 3.25 |

**Old Rags**

| | | | |
|---|---|---|---|
| No. 1 White Linens | 7.50 | @ | 8.50 |
| No. 2 White Linens | 6.50 | @ | 7.50 |
| No. 3 White Linens | 4.50 | @ | — |

# SIMPLICITY

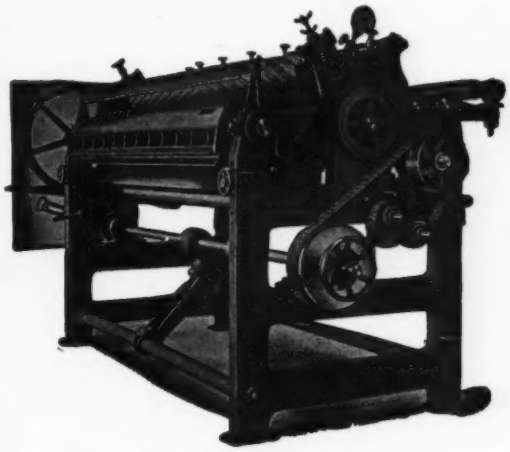
NASH VACUUM PUMPS HAVE ONE MOVING PART

Operating advantages made possible by the Nash principle, and present in no other type of vacuum pump, permit a new level of operating economy. Nash Vacuum Pumps have but one moving part, a rotor cast in one piece, and revolving without metallic contact. There are no valves, no pistons or sliding vanes, no internal parts requiring wear adjustment or lubrication.

NASH ENGINEERING COMPANY
SOUTH NORWALK, CONNECTICUT, U. S. A.

MODEL 28

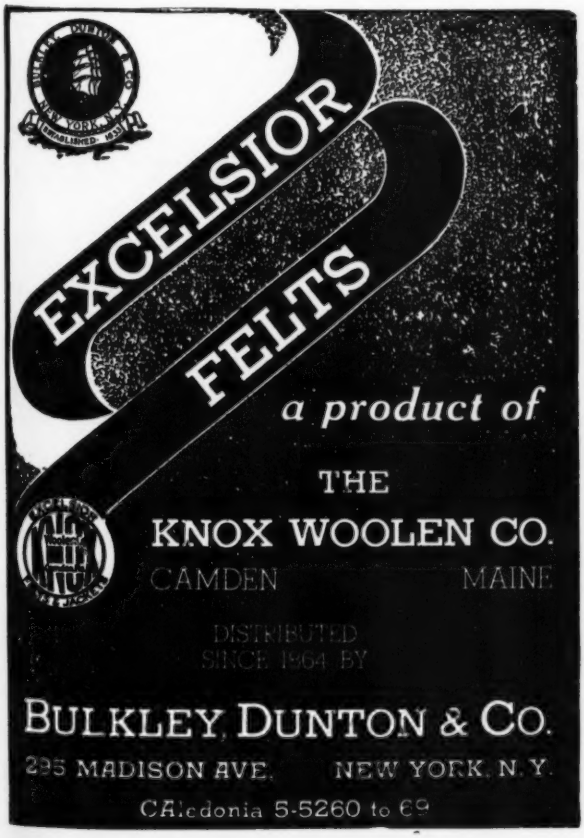
# ROLLER BEARING CUTTER



## HAMBLET MACHINE CO

LAWRENCE, MASS.

MAKERS OF
SINGLE, DUPLEX AND DIAGONAL PAPER CUTTERS
CUTTER KNIVES, PATENT TOP SLITTERS




# West Virginia Pulp and Paper Company

230 Park Ave.
New York

35 East Wacker Drive
Chicago

Public Ledger Building
Philadelphia, Pa.

503 Market St.
San Francisco, Cal.

Manufacturers of

ENGLISH FINISH SUPERCALENDERED
MACHINE FINISHED BOOK
and LITHOGRAPHIC PAPERS

Offset, Envelope, Bond, Writing, Mimeograph, Ledger, Eggshell, Cover and Music Papers, Index Bristol, Post Card and Label Papers

HIGH GRADE COATED BOOK

• • • •

KRAFT WRAPPING AND KRAFT ENVELOPE
KRAFT CYLINDER BOARD
BLEACHED SULPHITE AND SODA PULP
BLEACHED AND UNBLEACHED KRAFT PULP

MILLS:

Mechanicville, New York
Luke, Maryland
Covington, Virginia
Tyrone, Pennsylvania
Williamsburg, Pennsylvania
Cass, West Virginia
Charleston, South Carolina

| | | | |
|---|---|---|---|
| No. 4 White Linens. | 2.25 | @ | 3.25 |
| No. 1 White Cotton. | 4.25 | @ | 4.75 |
| No. 2 White Cotton. | 3.25 | @ | 3.75 |
| No. 3 White Cotton. | 2.50 | @ | 3.00 |
| No. 4 White Cotton. | 1.90 | @ | 2.20 |
| Extra Light Prints.. | 2.00 | @ | 2.40 |
| Ord. Light Prints... | 1.75 | @ | 2.15 |
| Med. Light Prints... | 1.55 | @ | 1.95 |
| Dutch Blue Cottons. | 2.25 | @ | 2.50 |
| French Blue Linens.. | 3.00 | @ | — |
| Checks and Blues... | 2.00 | @ | — |
| Linsey Garments.... | 1.90 | @ | 2.00 |
| Dark Cottons..... | 1.50 | @ | 1.60 |
| Old Shopperies..... | 1.30 | @ | 1.45 |
| New Shopperies..... | 1.45 | @ | 1.50 |
| French Blues..... | 2.25 | @ | 2.50 |

### Old Rope and Bagging

(Prices to Mill, f. o. b. N. Y.)

| | | | |
|---|---|---|---|
| Gunny No. 1— | | | |
| Foreign ..... | 1.75 | @ | 1.90 |
| Domestic ..... | 1.75 | @ | 1.80 |
| Wool Tares, light... | 1.60 | @ | 1.70 |
| Wool Tares, heavy.. | 1.80 | @ | 1.90 |
| Bright Bagging..... | 1.60 | @ | 1.70 |
| Manila Rope— | | | |
| Foreign ..... | 2.60 | @ | 2.75 |
| Domestic ..... | 2.75 | @ | 3.00 |
| Jute Threads..... | 3.00 | @ | 3.25 |
| Sisal Strings ..... | 1.50 | @ | 1.60 |
| Mixed Strings.... | .55 | @ | .60 |

### Old Waste Papers

(F. o. b. New York)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| White Envelope Cuttings ..... | 2.30 | @ | 2.40 |
| Ordinary Hard White No. 1.... | 1.90 | @ | 2.00 |
| Soft White No. 1.. | 1.60 | @ | 1.75 |
| Soft White Extra.. | 2.25 | @ | 2.40 |
| Flat Stock— | | | |
| Stitchless ..... | .80 | @ | .85 |
| Overissue Mag .... | .70 | @ | .75 |
| Solid Flat Book.... | .55 | @ | .60 |
| Crumbled No. 1.... | .40 | @ | .45 |
| Ledger Stock White. | 1.05 | @ | 1.15 |
| Ledger Stock Colored | .60 | @ | .70 |
| New B. B. Chips.... | .15 | @ | .20 |
| Manila— | | | |
| New Env. Cut.... | 1.40 | @ | 1.50 |
| New Cuttings..... | 1.00 | @ | 1.20 |
| Old Kraft Machine— Compressed bales.. | .60 | @ | .65 |
| News— | | | |
| No. 1 White News | 1.25 | @ | 1.30 |
| Strictly Overissue. | .40 | @ | .45 |
| Strictly Folded.... | .27½ | @ | .32½ |
| No. 1 Mixed Paper.. | .17½ | @ | .22½ |

### Twines

(F. o. b. Mill)

(Soft Fiber)

| | | | |
|---|---|---|---|
| Coarse Polished— | | | |
| India ..... | .12¾ | @ | .14¾ |
| White Hemp..... | .13¾ | @ | .15¾ |
| Fine Polished— | | | |
| Fine India..... | .16 | @ | .18 |
| Unpolished— | | | |
| Box ..... | .09½ | @ | — |
| Paper Makers..... | .09½ | @ | .10½ |
| Tube Rope..... | .10¼ | @ | .12½ |
| Wall Paper..... | .10¼ | @ | .12½ |
| Wrapping ..... | .12 | @ | — |
| Soft Fiber Rope... | .12 | @ | .14 |
| Cotton ..... | .16 | @ | .19 |

(Hard Fiber)

| | | | |
|---|---|---|---|
| Medium Java..... | .11 | lb | .17 |
| Mex. Sisal..... | .10 | @ | .16 |
| Manila ..... | .16 | @ | .23 |

## PHILADELPHIA

### Domestic Rags (New)

(Price to Mill, f. o. b. Phil.)

| | | | |
|---|---|---|---|
| Shirt Cuttings— | | | |
| New White, No. 1. | .06½ | @ | .07 |
| New White, No. 2. | .03½ | @ | .04 |
| Light Silesias..... | .03½ | @ | .04 |
| Silesias, No. 1.... | — | @ | .04½ |
| Black Silesias, soft | — | @ | .03 |
| New Unbleached.. | .05½ | @ | .06 |
| Washable, No. 1.. | .01½ | @ | .01¾ |
| Blue Overall..... | .04½ | @ | .05 |
| Cottons—According to grades— | | | |
| Washable No. 2.... | .01 | @ | .01¼ |
| New Blue..... | .01 | @ | .01¼ |
| Fancy Percales.... | — | @ | .02½ |
| New Black Soft.... | .03 | @ | .03½ |
| New Light Seconds | — | @ | .04½ |
| New Dark Seconds | .50 | @ | .75 |
| Khaki Cuttings— | | | |
| No. 1 O. D..... | .03 | @ | .03½ |
| No. 2 Mixed..... | .02 | @ | .02½ |
| Corduroy ..... | — | @ | .02 |
| New Canvas..... | .05 | @ | .05½ |
| New Black Mixed. | .02½ | @ | .02¾ |

### Domestic Rags (Old)

| | | | |
|---|---|---|---|
| White No. 1— | | | |
| Repacked ..... | 2.75 | @ | 3.00 |
| Miscellaneous .... | 2.00 | @ | 2.25 |
| Thirds and Blues— | | | |
| Miscellaneous .... | 1.00 | @ | 1.25 |
| Repacked ..... | 1.50 | @ | 1.75 |
| Black Stockings (Export) ..... | 3.00 | @ | 3.50 |
| Roofing Stock— | | | |
| Foreign No. 1.... | — | @ | 1.10 |
| Domestic No. 1... | — | @ | 1.05 |
| Domestic No. 2... | — | @ | .85 |
| Roofing Bagging.. | — | @ | .75 |

### Bagging

(F. o. b. Phila.)

| | | | |
|---|---|---|---|
| Gunny, No. 1— | | | |
| Foreign ..... | 1.65 | @ | 1.75 |
| Domestic ..... | 1.50 | @ | 1.75 |
| Manila Rope..... | — | @ | 3.00 |
| Sisal Rope..... | 1.50 | @ | 1.75 |
| Mixed Rope..... | .75 | @ | 1.00 |
| Scrap— | | | |
| No. 1..... | — | @ | 1.75 |
| No. 2..... | .95 | @ | 1.00 |
| Wool Tares, heavy.. | 3.25 | @ | 3.50 |
| Mixed Strings..... | .45 | @ | .50 |
| No. 1 New Light Burlap ..... | 2.50 | @ | 3.00 |
| New Burlap Cuttings | 1.75 | @ | 2.00 |

### Old Papers

(F. o. b. Phila.)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| No. 2 Hard White | 2.25 | @ | 2.30 |
| No. 2 Hard White | 1.90 | @ | 2.00 |
| No. 1 Soft White. | 1.75 | @ | 1.80 |
| No. 2 Soft White. | 1.30 | @ | 1.40 |
| No. 1 Mixed..... | .65 | @ | .75 |
| Solid Ledger Stock.. | 1.45 | @ | 1.50 |
| Ledger Stock, white. | 1.15 | @ | 1.20 |
| Ledger Stock, colored | .75 | @ | .80 |
| No. 1 Books, heavy. | .60 | @ | .75 |
| Manila Cuttings.... | 1.45 | @ | 1.50 |
| Print Manila..... | .45 | @ | .50 |
| Container Manila... | .35 | @ | .40 |
| Kraft Paper..... | .75 | @ | .80 |
| No. 1 Mixed Paper.. | .22½ | @ | .27½ |
| Straw Board Chip.. | .25 | @ | .30 |
| Binders Board Chip. | .25 | @ | .30 |
| Corrugated Board... | .50 | @ | .55 |
| Overissue News..... | .40 | @ | .45 |
| Old Newspapers.... | .35 | @ | .40 |

## BOSTON

### Old Papers

(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| No. 1 Hard White | 2.25 | @ | 2.50 |
| No. 1 Soft White. | 1.85 | @ | 2.15 |
| No. 2 Mixed..... | .75 | @ | .80 |
| Solid Ledger Books.. | 1.30 | @ | — |
| Overissue Ledger Stock ..... | 1.30 | @ | 1.50 |
| Mixed Ledgers..... | .85 | @ | .90 |
| No. 1 Books, heavy.. | .65 | @ | .75 |
| No. 1 Books, light.. | .65 | @ | .75 |
| Crumpled Stitchless Book Stock..... | .55 | @ | .65 |
| Manila Env. Cuttings | 1.70 | @ | 1.85 |
| Manila Envelope Cuttings, Extra Quality | 2.00 | @ | 2.10 |
| No. 1 Old Manila... | .65 | @ | .70 |
| White Blank News.. | 1.30 | @ | 1.40 |
| No. 1 Kraft..... | .65 | @ | .75 |
| Mixed Papers..... | .15 | @ | .17½ |
| Print Manila..... | .45 | @ | .55 |
| Container Manilas.. | .27½ | @ | — |
| Old Newspapers..... | .27½ | @ | .32½ |
| Paper Wool Strings.. | .60 | @ | .65 |
| Overissue News..... | .45 | @ | .50 |
| Box Board Chips.... | .20 | @ | .25 |
| Corrugated Boxes.... | .30 | @ | .32½ |
| Kraft corrugated boxes | .60 | @ | .65 |
| Screening Wrappers. | .40 | @ | .45 |

### Bagging

(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Manila Rope— | | | |
| Foreign ..... | [illegible] | @ | 2.65 |
| Domestic ..... | 2.65 | @ | 2.75 |
| Sisal Rope ..... | 1.75 | @ | 1.85 |
| Mixed Rope..... | .45 | @ | .50 |
| Transmission Rope.... | 1.90 | @ | 2.00 |
| Soft Jute Rope ..... | 2.00 | @ | 2.25 |
| Jute Carpet Threads. | .75 | @ | .90 |
| Gunny Bagging— | | | |
| Foreign ..... | 1.50 | @ | 1.65 |
| Domestic ..... | 1.40 | @ | 1.50 |
| Bleachery Burlap.... | 2.50 | @ | 2.70 |
| Gunny Bagging..... | 1.45 | @ | 1.60 |
| Scrap Burlap— | | | |
| Foreign ..... | 1.35 | @ | 1.40 |
| Domestic ..... | 1.25 | @ | 1.40 |
| Scrap Sisal..... | 1.55 | @ | 1.60 |
| Scrap Sisal for Shredding ..... | 1.75 | @ | 1.80 |
| Wool Tares, Heavy.. | 1.40 | @ | 1.50 |
| New Burlap Cuttings | 2.25 | @ | 2.40 |
| Aust. Wool Pouches. | 1.75 | @ | 2.00 |
| Heavy Baling Bagging | 1.50 | @ | 1.60 |
| Paper Mill Bagging.. | .85 | @ | 1.00 |
| No. 2 Bagging..... | .45 | @ | .50 |

### Domestic Rags (New)

(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Shirt Cuttings— | | | |
| New Light Prints... | .03¼ | @ | .03½ |
| New White No. 1.... | .0675 | @ | .0690 |
| New Light Flannelettes ..... | .05 | @ | — |
| Silesias No. 1..... | .04 | @ | .04¼ |
| New Black Silesias.. | .03½ | @ | .03¾ |
| Soft Unbleached..... | 6.50 | @ | 7.00 |
| Blue Cheviots..... | .05 | @ | .05¼ |
| Fancy ..... | .02 | @ | .02½ |
| Washable ..... | .02 | @ | .02½ |
| Cottons—According to grades— | | | |
| Blue Overalls..... | .04¼ | @ | .05 |
| New Black, soft... | .03¼ | @ | .04 |
| Khaki Cuttings..... | .02½ | @ | .02 |
| O. D. Khaki..... | .03 | @ | .03¼ |
| Corduroy ..... | .02¼ | @ | .03 |
| New Canvas..... | .06¼ | @ | .07¼ |
| B. V. D. Cuttings... | .06¼ | @ | .07 |

### Domestic Rags (Old)

(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Canvas ..... | .04¼ | @ | — |
| White No. 1— | | | |
| Repacked ..... | — | @ | 2.75 |
| Miscellaneous ..... | 2.50 | @ | 2.75 |
| White No. 2— | | | |
| Repacked ..... | 1.90 | @ | 2.00 |
| Miscellaneous ..... | 2.00 | @ | 2.25 |
| Twos and Blues..... | 1.75 | @ | 2.00 |
| Old Blue Overalls... | 1.50 | @ | — |
| Thirds and Blues— | | | |
| Repacked ..... | 1.37½ | @ | 1.75 |
| Miscellaneous ..... | 1.25 | @ | 1.62¼ |
| Black Stockings..... | 3.90 | @ | 4.00 |
| Roofing Stock— | | | |
| No. 1..... | 1.00 | @ | 1.10 |
| No. 2..... | .75 | @ | .85 |
| No. 3..... | .65 | @ | .70 |

### Foreign Rags

(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Dark Cottons..... | .90 | @ | 1.05 |
| Dutch Blues..... | 2.65 | @ | 2.75 |
| New Checks and Blues | 2.85 | @ | 3.00 |
| Old Fustians..... | 2.25 | @ | 2.50 |
| Old Linsey Garments. | 2.10 | @ | 2.25 |
| New Silesias..... | 3.75 | @ | 4.00 |

## CHICAGO

### Old Papers

(F. o. b. Chicago)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| No. 1 White Envelope Cuttings.... | 1.80 | @ | 1.90 |
| No. 1 Hard White. | 1.70 | @ | 1.80 |
| No. 1 Soft White.. | 1.50 | @ | — |
| Ledger & Writings.. | .75 | @ | .80 |
| Solid Books..... | .45 | @ | .50 |
| Blanks ..... | .90 | @ | — |
| Krafts ..... | .45 | @ | .50 |
| New Kraft Cuts..... | 1.10 | @ | — |
| Manila Env. Cuts... | Nominal | | |
| Ex. No. 1 Manila... | Nominal | | |
| Print Manila ..... | Nominal | | |
| Overissue News..... | .35 | @ | — |
| Old Newspapers— | | | |
| No. 1 Folded News | .25 | @ | .30 |
| No. 1 Mixed Paper | .15 | @ | .20 |
| Roofing Stocks— | | | |
| No. 1..... | 1.00 | @ | 1.05 |
| No. 2..... | .85 | @ | — |

## TORONTO

### Paper

### Bonds

Direct mill shipment in two-ton lots

| | | | |
|---|---|---|---|
| No. 1 White .....$35.50 | | @ | — |
| No. 1 Tints ..... | 36.50 | @ | — |
| No. 2 White ..... | 25.50 | @ | — |
| No. 2 Tints ..... | 26.50 | @ | — |
| No. 2 Golden Rod.. | 27.50 | @ | — |
| No. 3 White ..... | 21.00 | @ | — |
| No. 4 White ..... | 15.00 | @ | — |
| No. 4 Tints ..... | 16.00 | @ | — |
| No. 4 Golden Rod... | 17.00 | @ | — |
| Direct mill shipment in three-ton lots | | | |
| No. 5 White .....$10.50 | | @ | — |
| No. 5 Tints ..... | 11.50 | @ | — |
| No. 5 Golden Rod.. | 12.00 | @ | — |
| No. 6 White ..... | 9.00 | @ | — |
| No. 6 Tints ..... | 9.50 | @ | — |
| No. 6 Golden Rod.. | 11.00 | @ | — |
| No. 7 White ..... | 8.00 | @ | — |
| No. 7 Tints ..... | 8.50 | @ | — |
| No. 7 Golden Rod.. | 10.00 | @ | — |
| Book— | | | |
| No. 1 M. F. ..... | $7.00 | @ | — |
| No. 2 M. F. ..... | 6.50 | @ | — |
| No. 3 M. F. ..... | 5.35 | @ | — |
| No. 1 S. C. ..... | 7.25 | @ | — |
| No. 2 S. C. ..... | 6.75 | @ | — |
| No. 3 S. C. ..... | 5.85 | @ | — |

### Coated Book & Litho

Ton Lots (resale)

| | | | |
|---|---|---|---|
| No. 1 .....$12.00 | | @ | — |
| No. 2 ..... | 10.25 | @ | — |
| No. 3 ..... | 8.90 | @ | — |
| Coated tinted ..... | 13.00 | @ | — |
| Wrapping—delivered— | | | |
| Rag Brown..... | 4.85 | @ | 5.25 |
| White Wrap..... | 4.00 | @ | — |
| "P" Manila..... | 4.90 | @ | 6.15 |
| No. 1 Manila..... | 5.50 | @ | 6.90 |
| Fiber ..... | 5.50 | @ | 6.90 |
| Kraft No. 2..... | 5.50 | @ | 6.90 |

(F. o. b. Cars, Toronto)

| | | | |
|---|---|---|---|
| News per ton— | | | |
| Rolls (contract)..)46.00 | | @ | — |
| Sheets .....54.00 | | @ | — |

### Pulp

| | | | |
|---|---|---|---|
| Ground wood.....$29.00 | | @ | — |
| Unbleached sulphite. | 44.00 | @ | — |
| Bleached sulphite... | 54.00 | @ | — |
| Kraft ..... | 50.00 | @ | — |
| Soda ..... | 54.00 | @ | — |

### Old Waste Paper

(In carload lots, f. o. b. Toronto)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| White Env. Cut... | 2.00 | @ | — |
| Soft White..... | 1.75 | @ | — |
| White Blk. News.. | 1.25 | @ | 1.10 |
| Book and Ledger— | | | |
| Flat Magazine and Book Stock (old) | .70 | @ | — |
| Light and Crumpled Book Stock. | .60 | @ | — |
| Ledgers and Writings ..... | 1.00 | @ | — |
| Manilas— | | | |
| New Manila Cut... | 1.35 | @ | — |
| Printed Manilas... | .45 | @ | — |
| Kraft ..... | .95 | @ | — |
| News and Scrap— | | | |
| Strictly Overissue.. | .50 | @ | — |
| Strictly Folded.... | .45 | @ | — |
| No. 1 Mixed Paper.. | .30 | @ | — |

### Domestic Rags

(Price to Mills, f.o.b. Toronto)

| | | | |
|---|---|---|---|
| No. 1 White Shirt Cuttings ..... | .06½ | @ | .06¾ |
| Light Prints..... | .03 | @ | .03¼ |